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FREDERICK LAW OLMSTED NATIONAL HISTORIC SITE

HISTORIC STRUCTURE REPORT

Brookline, Massachusetts

VOLUME 2
Part 2

By

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PLANTING DEPARTMENT

Introduction

The Planting Department is a two-story wood-frame structure with a hipped roof. It is situated roughly perpendicular to the Clerical Department and the North Drafting Wing. The east wall of the Planting Department adjoins the west walls of these structures. The south elevation of the Planting Department faces the rear courtyard, its west elevation faces the barn, and its north elevation faces the Plans Vault (figs. 1-2).

The Planting Department is the only structure in the office complex that was originally built with two stories. It was designed by Arthur H. Vinal for Olmsted Brothers in 1900. The building permit for this structure was issued December 1, 1899, to "F. L. Olmsted owner, to build an addition 25′ by 36′, two and one-half stories, hip roof, stone foundation, sheathed inside, to have one chimney, and be heated with steam, to be used as a drafting office."[1] The building permit identifies the builder as B.N. Neal, Jr.

The Planting Department, like the other buildings in the office complex, is roughly rectangular in shape. It has a puddingstone foundation; the exterior walls are covered with clapboards. The two-over-two, double-hung windows typical of the offices are used throughout the Planting Department, except on the second story of the south elevation, where oversized windows were installed through which the sun-printing frames ran. The hipped roof is presently covered with slate. Located at approximately the center of the roof's ridge are a brick chimney and a louvered, wooden ventilator cover.

The exterior of the Planting Department has been painted approximately eight times. The original paint scheme was dark red clapboards (Munsell 2.5YR 3/2), dark green trim (Munsell BG 3/1), and black window sashes (N1 5/1). All were lead-base paints. The original color scheme continued to be used on the building until the 1950's, when all of the exterior woodwork was painted gray. It was later painted with green and brown monochromatic color schemes. All of the paints used on the exterior of the building after circa 1950 are latex paints.

On the interior, the basement of the Planting Department presently houses the office boiler and sprinkler system compressor. The remainder of the area is used for storage. Originally, the east half of the basement was finished and used as part of the office. Access to this finished space was from a stairway located at the southeast corner of the room.

The first story of the Planting Department consists primarily of one large room that was originally used for drafting (figs. 3-4). In recent years, it housed the firm's library. The room is L-shaped, because its southeast corner is partitioned off to form the former men's coat room and toilet room (fig. 5). A large cupboard (fig. 6) covers one of the walls forming the toilet room. In the extreme southwest corner of the large room is a small office (fig. 7). This small office presently has shelves along its west wall containing the remainder of the firm's rare book collection.

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[1] See "Offices: Appendix G, Building Permits."

The second story of the Planting Department also contains one large L-shaped room along its north side that was originally used for drafting (figs. 8-10). Two smaller rooms and two closets on the south side of this story comprised the firm's drawing and printing department. The southeast room, called the Print Room, is seen in figures 11-12. It has an ammonia-vapor closet at its east end (fig. 13), and also contains the Wagenhorst Electric Blue Printer (fig. 14-15). Originally the sun-printing frames were located in this room. The southwest room is called the Developing Room. It contains a sink and trays for washing the drawings (figs. 16-18). To the west of the Developing Room is the Drying Closet, which holds tracks and racks on which the drawings were mounted to dry (see figure 10, at right).

The first story of the Planting Department is presently used for archival research; the second story is used for interpretation. The second story, with its well-preserved collection of historic printing equipment, is one of the site's most important interpretative spaces.

Architectural History

Date of Construction

The Planting Department was built in 1900-1901. Original trace drawings for this building, signed "Vinal, are on file in the Olmsted archives (figs. 19-23). Vinal did not date these drawings; however, on the outer edge of the first-floor plan is written, in a hand other than Vinal's, "addition to present office 1900." Two photographs were taken of the Planting Department while it was under construction (figs. 24-25). These photographs are titled "Showing first day's work on office addition December 11, 1901." The date in this citation is incorrect on two counts. First, the work is clearly well beyond the first day's work. Second, it is known that the structure was mostly complete by December 11, 1901 (fig. 26). To date, no correspondence has been found describing the construction of this building.

Evolution of Design

Unlike the other buildings in the office complex, there are no trace studies that document an evolution of the design for this building. Rather, the drawings in the Olmsted archives for the Planting Department are final construction drawings.

Description As Originally Built

Exterior Elements

Foundation

The foundation walls of the Planting Department were constructed with random-cut puddingstone. They were approximately 1 foot 4 inches thick. The stone was laid with a light brown, natural-cement mortar. The mortar joints on both the interior and exterior foundation walls were filled to create a uniform surface. The joints were tooled, with a single recessed line, to resemble cut stone. On the interior, the area between the floor joists was filled in with brick.

Located along the west end of the south foundation wall was an areaway with steps leading down to a basement doorway. The areaway retaining wall, which was 1 foot thick, was constructed with the same materials as the Planting Department foundation. The nine steps, which remain today, are concrete. The treads are 10 inches wide and 3 feet 10 inches long; the risers are 7 1/2 inches high. The original drawing for the areaway stairway (fig. 21) shows them with winders at the bottom. There is no evidence that these were ever built: the existing flat landing appears to be original. It has a drain in its center.

The Planting Department originally had three basement windows—two in the north wall (fig. 19) and one in the south wall (fig. 20). A 1900 sectional drawing of the west basement wall (at right in figure 19) shows another basement window that was not built. There is a window presently in this location, but it was installed later. This is based upon the fact that paint samples taken from the casing of the window do not contain the full historic layering sequence.[2] In addition, the edges of the opening in the stone foundation for this window are lined with brick, rather than with the cut stone used for the original north- and south-wall windows.

The three original basement windows were surrounded by semicircular window wells. The south window well was 5 feet 3 inches deep. Its walls were 1 foot thick and constructed with the same stone and mortar as the foundation walls. The catch basin shown in figure 19 at the bottom of this window well was never installed. The north window wells were 3 feet deep. The 1900 basement plan (fig. 21) shows them as being the same type of construction as the south window well. It is thus assumed that they were originally constructed with stone and mortar matching that of the foundation.

Framing

Unlike the Clerical Department and North Drafting Wing, the framing of the Planting Department is concealed. Fortunately, several photographs were taken of the building while it was being framed (figs. 24-25). Its walls were of stud-frame construction. The principal framing members are unknown, since the walls were not opened during the preparation of this report.

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[2] See "Offices: Appendix B," paint sample FRLA 02 P165.

Wall Sheathing and Cladding

The sheathing of the walls of the Planting Department, unlike the sheathing of the Clerical Department and North Drafting Wing, was nailed to both the inside and outside of the framing members. On the exterior, the sheathing planks were nailed to the studs (fig. 24).

The exterior walls of the Planting Department were covered with butt-end clapboards. They had a 3 3/4-inch reveal. There was probably a layer of building paper between the planks and clapboards, but its existence has not been verified.

The sill board of the Planting Department was the same design as used on the Clerical Department and North Drafting Wing. It consisted of a 3-inch wide vertical strip, capped with a 3 3/4-inch wide board placed at approximately a 30-degree angle. The corner boards are constructed with two overlapping boards—the wider board measures 4 3/4 inches, while the narrower board is 3 3/4 inches.

On the south wall, running between the bottom of the first-story window sills and the top of the foundation fascia, were six vertical strips 2 1/2 inches wide. This placement coincides with the frames of the second-story printing frames. Figure 20, an elevation drawing of the south wall, shows the printing frame supports extending only as far down as the sill of the first-story windows. These vertical strips, however, suggest that the frame supports spanned the full length of the first-story walls. Unfortunately no historic photographs have been found of the full south elevation of the Planting Department, to indicate how the vertical strips functioned.

Doorways

The Planting Department, as stated previously, had one basement doorway west of center in the south wall. The first story had no doorways. An interior stairway ascended from the basement to the first story. Direct access to the first and second stories of the Planting Department was possible only from the North Drafting Wing.

Windows

The three original basement windows have been discussed in connection with the foundation. The windows held double-hung, two-over-two sashes (figs. 19-20) with the same muntin profile as the sashes of the first- and second-story windows.

Unlike on the Clerical Department and the North Drafting Wing, where the windows are arranged in uninterrupted rows, the Planting Department's windows tended to be grouped in pairs. The first-story windows were somewhat longer than the second-story windows. This was clearly evident on the north elevation (fig. 19), which had three evenly spaced pairs of standard-size windows on both the first and second stories (fig. 19).

The fenestration of the south wall (fig. 20) was very irregular, reflecting the varied uses of the rooms along this wall. On the first story, there were two pairs of standard-size windows on the west half, a pair of small windows east of center (for the men's toilet), and one standard-size window at the east end. The second story had four individual windows: one standard-size window toward the west end, and three oversize windows to accommodate the printing frames that ran out of them (fig. 20).

The west and east elevations each had a single first-story window (fig. 22) and a pair of second-story windows (fig. 23). The west-elevation windows were centered on their wall, while the east-elevation windows were at the south end of their wall. The east-wall's second-story windows were close to the roof of the adjacent Clerical Department—so close that the north window of the pair had only a top half, with clapboarding below (see figure 26).

Most of the Planting Department windows had two-over-two, double-hung sashes. The pair of small windows on the first story of the north wall had one-over-one, double-hung sashes (fig. 20). The half window in the second story of the east wall had a single two-light sash. Of the three printing-frame windows on the second story of the south wall, the center one had triple-hung sashes arranged three-over-three-over-three. The bottom sash of this window contained wood panels, rather than glass. The other two printing-frame windows had three-over-three, double-hung sashes.

The frames of the Planting Department windows were plain boards 5 inches wide. The tops of the first-story window frames were flashed with a strip of zinc. The window sills were 1 3/4 inches thick and 6 inches wide. The first-story window sills ran continuously around the building. Underneath this continuous sill was a 1-inch quarter-round. On the second story, the window sills extended only approximately 1 inch beyond the sides of the window frames.

Roof and Cornice

The framing of the hipped roof of the Planting Department, like that of the walls, is concealed. Unfortunately, most of the roof framing is not visible in the construction photographs of the building (figs. 24-25). The portions of the roof framing that are shown indicate that it was framed like a traditional hipped roof. The base of the rafters were set with bird's-mouth cuts onto the plates and pinned, while their apexes were set with mortise-and-tenon joints into the hip rafters and ridge beam. The rafters measured 2 by 7 inches and are placed 1 foot 6 inches on center.[3]

The roof sheathing consisted of random-width boards 1 inch thick. The sheathing boards were covered with a layer of black roofing paper. The roof was covered with wood shingles. The hips and ridge of the roof were also covered with shingles.

The cornice of the Planting Department consisted of a 3-inch fascia board that also functions as the top of the casing of the second-story windows. The cornice molding consisted of a cavetto and quarter-round. The soffit and fascia were unmolded. The fascia overhung the soffit approximately 1 inch. The crown molding consisted of a fillet and quarter-round. The wood gutter formed the top of the cornice.

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[3] Several of the matched sheathing boards covering the ceiling were removed during the preparation of this report, exposing part of the roof framing. The size of the rafters and their placement was measured in these exposed areas.

Chimney

The Planting Department's chimney was located just north of, and toward the west end of, the roof ridge. It measured 2 feet 5 inches by 1 foot 9 inches. It was constructed with red brick, with 14 courses of brick being exposed above the roof line. The main shaft of the chimney was six courses high, the projecting cornice was two courses high, and the cap had two straight courses and four inward-tapering courses.

Gutters and Downspouts

All four sides of the Planting Department received wooden gutters at the time of construction. The gutters were spiked to the plate. The downspouts were located along the north and south walls. The original elevation drawings for the building call for 3-inch conductors at the ends of these walls. The downspouts ran into drains that connected to the two main catch basins, located at the northwest and southwest corners of the rear courtyard.

Ventilator Cover

A ventilator cover was located toward the east end of the roof ridge. It was a square structure measuring 3 feet 7 inches, with louvered sides and a hipped roof. The base of this structure was flashed with copper, and its roof was covered with wood shingles. The cover does not appear in the original elevation drawings of the Planting Department (figs. 19-20), nor in the circa-1900 construction photographs (figs. 24-26). However, it was added when the interior of the building was finished or shortly thereafter, judging by its interior construction and its presence in a 1903 photograph of the Planting Department.

Interior Elements

Plan

The original basement plan (fig. 21) consisted of a finished room on the east side and a slightly smaller boiler room on the west side. The finished basement room was intended to contain plans cases. It was not connected to the west boiler room; it was accessible only from the first story of the Planting Department via a stairway in the southeast corner of the room.[4]

One known departure from the circa-1900 plan was the way in which the room had to be built around the ledge outcropping in the northeast corner of the room. This ledge is shown in figure 28, a 1913 basement plan. The presence of this ledge limited the amount of storage space available in the room, and an underground spring was found here, as well. These discoveries made the room unsuitable for its intended use as a plans storage area. They may have been the catalyst for the building of the Plans Vault, begun just about the time that the Planting Department was finished. The presence of the ledge and spring add weight to the theory that the plans formerly stored in the

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[4] Handwritten notations on figure 21 refer to the stairway as "not used," and show the addition of a doorway in the wall between the two basement rooms. However, these appear to date to circa 1909, as will be explained subsequently.

North Drafting Wing were not moved to the Planting Department at all, but were moved directly to the Plans Vault upon its construction.

The west boiler room was accessible from the exterior basement doorway in the south wall. The southwest corner of the room was partitioned off for a coal bin. A chimney sat along the east wall; the coal boiler was situated just north of the chimney.

The original first-floor plan, shown in figure 22, consisted of one main room that was L-shaped, due to the fact that its southeast corner was partitioned off for the basement stairway, a coat room, and a two-stall men's toilet room. The west end of the main room was divided into north and south areas by a "peninsula" of office furniture, primarily plans cases under shelves, that was 7 feet 11 inches high. The north area was used a drafting area; although it was not designated as such on the plan, there were five adjustable drafting lamps there. The south area appears to haver been used as office space.

The original second-floor plan is shown in figure 23. Again, there was one main L-shaped room along the north side of the space, with three smaller rooms along the south side. The east part of the L-shaped room was used for drafting, based on the presence of three adjustable drafting lamps, and the fact that it was accessible from the first story of the North Drafting Wing. The west part of the main room was used for print drying and mounting, in conjunction with the adjacent plans-printing department. The latter occupied the three rooms along the south side of the story. Of the three, the southeast "Print Room" contained sun-printing frames, with tracks that ran out the three south-wall windows. The Print Room was reached via two doorways leading from the main room. The middle "Developing Room" housed the print-washing tanks; it was accessible from the Print Room. In the extreme southwest corner was the closet-like "Drying Room." Ceiling-mounted racks at the west end of the main room for drying the wet prints extended into this closet.

Floors

The framing for the first floor, exposed in the west half of the basement, consisted of 2- by 10-inch joists, running north/south and placed 1 foot 4 inches on center. They were set into the sills and center carrying beams with cog-butt joints. (The carrying beams measured 6 by 10 inches.) The subflooring was narrow pine boards, laid perpendicular to the floor joists. None of the framing for the second floor was exposed during the preparation of this report.

Most of the finish floors in the first and second stories of the Planting Department were fir boards 3 1/2 inches wide. The exceptions were the floor of the small office in the southwest corner of the first story, and the floor in the Developing Room on the second story. The small office had maple floorboards 2 inches wide. The floor in the Developing Room was covered with zinc and had a floor drain located in its southeast corner. On top of the zinc covering was a raised wood-slat floor. The floor slats were 2 inches wide. The original finish on the fir floors is unknown. It is assumed that the east, finished room in the basement also had a wood floor; however, all evidence of this floor has been destroyed.

Walls and Ceilings

The interior partition walls were constructed with 2- by 4-inch studs, which were toe-nailed to the subflooring of their respective floors, to the second-story floor framing, and to the roof rafters. The interior sheathing material was nailed directly to the studs. The sheathing of the walls and ceiling in the finished basement room was beaded matched boards 3 1/2 inches wide. The room does not appear to have had any baseboards or window trim.

The sheathing on the walls and ceilings of the rooms on the first and second stories was cypress matched "washboard" sheathing placed horizontally. The junction of the wall and ceiling sheathing was untrimmed. The rooms likewise had no baseboards: the cypress matched "washboard" sheathing extended down to the floor. The original finish on this sheathing was shellac.

Doorways

The doorway casings in the Planting Department were constructed with the same cypress matched "washboard" sheathing as used on the walls and ceilings. The sides and tops of the frames were six beads wide and jointed with miters. Two types of doors were used in the Planting Department when it was built. The most common was a five-panel door, used in the men's toilet on the first story and in the printing department on the second story. The panels were recessed and had a molded edge. The other circa-1900 doors in the Planting Department were glazed. They were located on the first story, and led into the men's toilet and to the basement stairway. These doors had two recessed panels trimmed with the same molded edge as the five-panel doors. The upper half of the door contained a single pane of glass. On the door leading into the men's toilet, the lower half of the glass is frosted.

The doorway leading to the stairway descending from the second story of the Planting Department to the first story of the North Drafting Wing may also have been installed when the Planting Department was built. Extant today, it is hung with the same hinges as the other circa-1900 doors; however, its other hardware and panel moldings are different from these doors. The stairway door has a single recessed, molded panel and eight lights.

The doors are hung with two-butt, brass ball hinges measuring 5 1/4 inches long. They have brass circular knobs, brass roses, and rectangular brass escutcheons.

Windows

The two windows in the east basement room had casings of unmolded boards 4 1/2 inches wide, judging by the casing of the north-wall window as it exists today.

The casings of the first- and second-story windows were constructed with the same type of cypress matched "washboard" sheathing as used for the walls, ceilings, and doorway casings. The window stools were 4 inches wide and 1 inch thick, and they had a rounded edge. The window aprons were four beads wide.

The window hardware in the Planting Department consisted of iron meeting-rail locks. The locks had a quarter-round catch mounted on a rectangular base. The latch, which also had a rectangular base, consisted of a curved pivot handle with a round end. The sash-cord plates were rectangular, measuring 1 by 4 inches, and had rounded ends.

Furniture

The original floor plans for the Planting Department called for plans cases to be placed at various locations along the walls of both the first and second stories. The building of the Planting Department preceded the building of the Plans Vault by two years, and during that time there may have been plans cases in the locations shown on the drawings. However, once the Plans Vault was built, these cases were undoubtedly removed. The design of the plans cases located in the Planting Department is unknown. On the drawings they are shown as being approximately 1 foot 4 inches wide. The absence of marks on the walls where they stood suggests that they were freestanding.

The original first-floor plan shows a cupboard built into the center of the east wall and marked with the notation "Herb—[arium]." This cupboard exists today. It is 5 feet 2 inches high, 2 feet 6 inches wide, and 1 foot 7 inches deep. It has double doors, each with six recessed panels. These doors are hung with three three-knuckle brass cabinet hinges and fastened with spring-loaded brass latches. The inside of the cupboard is divided into four sections, and each section contained four shelves. All of the shelves are missing, but their ledger strips remain in place to identify their locations. The shelves were spaced about 7 inches apart. Located directly under the cupboard is a sliding shelf that could be pulled out when sorting items stored in the cupboard. Under the sliding shelf is a single drawer.

Another piece of built-in furniture extant in the first story is a row of cupboards along the wall that partitions off the men's toilet (fig. 6). These cupboards appear to have been built in this location in 1900-1901; however, since they are constructed with wire nails, they may have been built slightly later. The cupboards are 2 feet 8 inches high, 8 feet 11 inches long, and 1 foot 8 1/2 inches wide. Their frame is constructed with cypress matched "washboard" sheathing. They have six two-panel doors arranged in pairs. The individual doors measure 1 foot 4 inches wide by 2 feet 1 inch high. They are hung with two of the same three-knuckle brass hinges as the other east-wall cupboard doors, and have the same spring-loaded brass latches. Built-in furniture in the second story included paper-storage racks on the south wall of the main room (figure 8, left side).

Printing Equipment

The firm's printing and developing equipment was moved from the basement of the North Drafting Wing to the second story of the Planting Department as soon as the latter was completed. Figure 23, the circa-1900 plan for the second story of the Planting Department, shows three sun printers installed in the southeast Print Room. The plan indicates that the outer two frames had been reused from the basement of the North Drafting Wing. The middle frame may not have been built until 1903. An entry in the firm's account book dated March 27, 1903, indicates that one print frame was built at this time. The entry reads, "B.W. Neal - Labor and Materials - Print Frame - $54.35." This frame was undoubtedly similar in design to the earlier two.

The Planting Department's printing frames ran outside on wooden tracks extending through three of the south-wall windows (see figures 20 and 26). These tracks were set into the window sills. (The patched cutouts for the tracks remain in the existing window sills.) The printing-frame tracks were supported by multiple wooden and metal braces mounted to the south exterior wall. How the printing frames were supported inside the Planting Department is unknown, since they were disassembled and discarded when the later printing equipment was installed. It is assumed they were supported on simple wood platforms.

The sun-printing frames were used to make blueprints. In "Blue Print Reading for the Building Trades," this printing process is described as follows:

> Almost all drafting rooms have a frame for the purpose of making blueprints. These frames are made in many styles—some simple, some elaborate. A simple and efficient form is a flat surface, usually of wood, covered with a padding of soft material, such as felting. To this is hinged the cover, which consists of a frame similar to a picture frame in which is set a piece of clear glass. The whole is either mounted on a track or on some sort of a swinging arm, so that it may readily be run in and out of a window.
>
> The print is made on paper, which is prepared for the purpose by having one of its surfaces coated with chemicals which are sensitive to sunlight. The frame is laid on its face and the back removed. The tracing is laid against the glass, face down; the coated paper is then placed on it with the coated side against the tracing cloth. The back is clamped down tightly to keep the tracing in close contract with the blueprint paper. The frame is now set with the glass exposed to a suitable artificial light or to bright sunlight.
>
> When the drawing has remained in the sun for a few minutes, the blueprint paper is taken out and thoroughly washed in clean water for several minutes and then hung up to dry. If the paper has been recently prepared and the exposure properly timed, the coated surface of the paper will now be of a clear deep blue color except where it was covered by the ink lines, where it will be white.[5]

The tanks and sinks used for washing the sun prints were located in the second-story southeast Developing Room (figs. 16-18). Some printing processes washed the exposed paper only with clear water; others used a fixing solution of potassium bichromate (potash) and water. Edward J. Muller in *Reading Architectural Working Drawings* describes this process for making blueprints as follows:

> Blueprinting is actually a photographic method of copying an original drawing. Photosensitive paper used has chemicals on its surface yet it appears white to the eye. The development of the sensitive paper is then completed by washing in a fixing bath, usually potassium bichromate and

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[5] Dalzell, McKinney, and Ritton, *Blueprint Reading for the Building Trades*, pp. 11-14.

> water or other oxidizing agents, followed by a bath of clear water. The print is then dried. The clear water bath washes away all the chemicals, which have been protected by the linework on the original. The fixing bath also improves the contrast on the print.[6]

It appears that the Olmsted firm used the process that fixed the printing with potassium bichromate, based on the additional print-washing system in the Developing Room. This system will be described in the following section, "Utility Systems," in connection with the plumbing.

The washed prints were dried on wood racks that ran on metal tracks. These tracks were attached to the ceiling at the west end of the main second-story room of the Planting Department (see figure 23). The tracks ran north-south, extending across the width of the room and into the Drying Room, or closet, in the southwest corner of the room.

The closet was helpful in that the wood racks could be stored there when not needed, and pulled out into the room when needed. However, a more important function seems to have been to help dry the prints during the summer months. The closet had a small gas heater along its east wall. In the summer, when the main office heating system was unused, the racks of wet prints were pulled into the closet. The closet door was closed and the heater was activated. (The closure was quite tight: even the gaps between the metal tracks on the ceiling were filled in with metal strips.) The heater was vented with a galvanized pipe 5 inches in diameter that ran into a flue in the center chimney.

Utility Systems

Electrical System

Unlike the first story of the Clerical Department and North Drafting Wing, the Planting Department was originally wired for electric lighting, rather than piped for gas lighting. The circa-1900 construction drawings show the proposed location for the electric lighting fixtures. The knob-and-tube wiring that still feeds the first-story ceiling fixtures had to have been installed while the building was under construction.

The fuse box for the original wiring circuits in the Planting Department was located on the north wall of the first-story men's toilet. The first-story lighting fixtures were originally served by knob-and-tube wiring concealed in the ceiling; on the second story, the original wiring is exposed. Additions and alterations were made to the original wire runs with wooden wire mold.

The drafting areas of the Planting Department—the north sides of the first and second stories—had adjustable (jointed) drafting lamps. Each lamp was powered by a cloth-covered wire that ran from the base of the lamp to a porcelain rosette on the ceiling that covered an electrical box recessed into the ceiling. In the first story, there were five of these lamps. This is the number of lamps shown on the circa-1900 first-floor plan, and five recesses for electrical boxes remain in the ceiling where rosettes were formerly located. The wires were longer than needed, which allowed the drafting lamps to be moved around. The original drafting lamps used in the Planting Department were probably similar to the existing drafting lamps, except that they had round bases.

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[6] Edward J. Muller, *Reading Architectural Working Drawings*, pp. 20-21.

There were three ceiling-mounted drafting lamps on the second story. The circa-1900 floor plan shows three lamps on the north side of the large room. Two of the original square wood mounting blocks for these lamps remain on the ceiling, and marks identify the location of the third block. As in the first story, each second-story lamp had a cloth-covered wire leading from a porcelain rosette on the ceiling, the wire being long enough to permit the lamp to be moved around.

The other original lighting fixtures on the first and second stories of the Planting Department were also placed in the approximate locations shown on the circa-1900 floor plans. These fixtures consisted of a brass socket with a conical metal shade that hung on a cloth-covered wire suspended from a white porcelain rosette on the ceiling. The insides of the shades were painted with white enamel, the outsides with green paint. In addition to the electric lights, the Planting Department was also wired for the circa-1903 fire-detection system installed by the Boston Automatic Fire Alarm System.

Heating System

The Planting Department was originally heated by a coal-fired steam boiler. This boiler was situated along the east wall of the unfinished west basement room, next to the chimney that still remains along this wall (see figure 21). The chimney stack measured 2 feet 4 1/2 inches by 1 foot 4 1/4 inches. The boiler was vented into the north side of the chimney, based upon a hole here today measuring 10 inches in diameter and covered with metal. There was also probably a flue clean-out on the west side of the chimney, judging by a rectangular patch here today measuring approximately 9 by 12 inches.

The large wall-mounted radiators in the Planting Department appear to have been installed as part of this system. On the first story, these radiators run underneath the windows for the full length of the north wall, and at ceiling height along the west wall of the men's toilet. On the second story, these radiators run the full length of the north wall and along the north end of the west wall. There is also a wall-mounted radiator on the north wall of the Developing Room. The galvanized expansion tank, mounted near the ceiling just west of the chimney on the second story, also appears to have been part of this original steam heating system.

Plumbing System

Plumbing equipment was installed circa 1900 in the Planting Department in the first-story men's toilet and in the Developing Room on the second story. The toilet room had two pull-chain toilets, a corner sink, and a corner urinal. All of the original fixtures except for the urinal remain in place today, so their appearance is known. The corner sink is white porcelain and wall-mounted. It has nickel-plated faucets. The knobs have white porcelain centers marked hot and cold. The water-supply pipes to the sink are three-quarter-inch brass; the drain pipe and trap are lead. The toilets are white porcelain, with wood seats painted with white enamel. These seats never appear to have had covers. The toilet's water tanks are encased with cypress matched "washboard" sheathing. The tanks themselves are also constructed of wood. They measure 1 foot 8 3/4 inches long, 1 foot wide, 10 inches deep, and are lined with tin. The flushing mechanism consists of a metal plunger that is raised by a metal arm, which is connected to a metal chain with a black wood handle. The tanks are filled from a 1-inch lead pipe. The height of the water in the tanks is controlled by a float. The original floats have been replaced with modern rubber floats. The design of the original urinal is unknown, other than that it was a corner type. Water was supplied to the urinal by a three-quarter-inch brass pipe, and it had a 2-inch lead drain. The urinal drain was vented by an exposed pipe that ran up the north wall of the toilet room, across the ceiling, and into the vent stack located at roughly the midpoint of the south wall.

Plumbing fixtures in the second-story Developing Room included two platform sinks on the south wall; another sink at the north end of the east wall; and a double-hose connection at the west end of the north wall. Also on the east wall were a water-storage tank and a wooden washing rack. All were served by a 1-inch galvanized supply line that entered the room along the south wall on the west side of the drain and vent stack.

The two platform sinks on the south wall were constructed one on top of the other. They had wood frames and were lined with galvanized metal. The bottom sink was 6 feet 4 inches long, 4 feet wide, and 6 inches deep. Water was supplied to this sink by a lead faucet mounted on the south wall. This sink drained from its southeast corner into a lead pipe 1 1/2 inches in diameter. This pipe ran through the floor and into the south-wall drain. This drain was opened and closed by a valve with a circular handle located on the underside of the sink.

The upper sink measured 6 feet 11 inches long by 3 feet 11 inches wide. It had a tapering depth from 1 inch at the west end to 3 inches at the east end. When not in use, this sink could be raised by a pulley system mounted on the ceiling. The sink drained from its southeast corner through a portable metal drain that ran into the main floor drain. This sink did not have its own water supply, but was served by hoses running from the north-wall hose connections.

From the south wall, the water-supply line ran across the east wall to a wall-mounted faucet above the sink on that wall. This location for the sink differs from the location on the original second-story floor plan, which shows the sink in the northwest corner of the room. However, examination of the plumbing for the existing sink clearly indicates that it has always been in the northeast corner of the room. First, the water-supply line for the sink is tied into that for the water-storage tank also on the east wall. Second, the overflow from the storage tank runs down into the sink. Third, water marks and wear are evident on the beaded matched-board sheathing surrounding the existing sink. By contrast, the walls in the northwest corner of the room show no signs of water damage, nor any markings from the mounting of the sink on the walls (although they are presently covered by a sheet of galvanized metal).

One additional piece of evidence for the location of the sink in the northeast corner is the hinge marks on the doorway into the Developing Room. The circa-1900 plan shows the door here as being hinged on its east side, which would have been logical if the sink had been in the northwest corner. The door has since disappeared; however, its hinge mortises remain on the west side of the doorway's casing, as would have been required if the sink was in the northeast corner of the room.

The sink on the east wall measured 2 feet 11 1/4 inches long, 1 foot 7 inches wide, and 6 1/4 inches deep. The wooden frame of the sink was constructed with cypress matched "washboard" sheathing; the liner was galvanized metal. The sink was nailed directly to the wall. It was also supported by a diagonal brace, measuring 1 1/2 by 1 3/4 inches, located at its south end. The sink's faucet was brass; its drain, located in the center of its south end, connected to a 2-inch lead drain pipe that ran into a vented lead trap, then over to the south-wall stack.

From the northwest corner of the sink, the water-supply line continued onto the north wall, passing above the doorway to reach the west end of that wall. Here, it turned and ran down to two hose connections. The upper hose faucet was brass, with a circular handle that was painted black. This faucet connected to a black rubber hose that was wrapped around a circular rack mounted on the north wall. Hoses running from these connections were used to wash prints in the platforms sinks on the south wall.

The Developing Room had another print-washing system separate from this one. The primary component of the second system was the water-storage tank mounted on the east wall at ceiling height. This was probably the "tank" purchased by the firm on March 27, 1903. The entry in the account book reads as follows: "Codman & Shurtleff - Tank, etc. for Print Room - $25.65." The tank was constructed with wood with a zinc lining. It measured 5 feet 2 inches long, 2 feet 2 inches wide, and 3 feet 3/4 inches deep. There was an overflow located on the north side of the sink. The overflow was a pipe 1 1/2 inches in diameter that emptied into the sink below. The outlet of this tank was located in its bottom, at the southeast corner.

Water was supplied to this tank by opening a valve located under the sink. When the valve was opened, water was pumped into the tank by a pneumatic pump mounted at the top of the tank at its north end. The compressor for the pump was located in the adjoining Print Room. Air was supplied to this pump by a half-inch galvanized pipe that ran under the tank and through the east wall at its south end.

Once the tank was filled, water ran by gravity force into a "T" pipe connection approximately 8 inches below the tank. The pipes that ran off the connection have been removed, and there are no markings on the wall indicating where they ran. It seems likely that they terminated in hose connections. From there, hoses could be run to wash drawings mounted either in the platform sinks on the south wall, or on the wooden rack that stood at the south end of the east wall.

This rack measured 6 feet 10 1/2 inches high by 4 feet wide. It had a catch trough at its bottom that measured 4 feet long, 6 1/2 inches wide, and 6 3/4 inches deep. The face of the rack and the trough were lined with galvanized sheet metal. A drain was located at the south end of the trough. It ran through the floor and into the south-wall drain.

It appears that the purpose of the second washing system was to allow potassium bichromate to be added to the wash-water in the tank. As explained in the previous section, "Interior Elements, Printing Equipment," this was one method used to develop light-sensitive paper.

Additions/Alterations

Unlike the other buildings in the office complex, the Planting Department was originally built as a two-story structure. Consequently, it never underwent the large-scale additions and alterations that were made to the other office buildings to enlarge them from one to two stories. The alterations made to the Planting Department have been relatively minor and more or less uniformly distributed over the history of the building.

Changes Shortly After Construction

Changes in Fenestration

A small window with one sash was cut into the west basement wall north of center at an early but unknown date. A paint sample taken from the casing of this window contains nine layers of paint, rather than the 10 found on the other exterior trim. The similarity in the number of paint layers indicates that it was an early addition. The tan primer used on this window casing, however, rather than the brown primer used on all the original exterior woodwork, clearly indicates that it is not original.

Removal of Plans Cases

A number of plans cases are seen in the first-story space on the circa-1900 plan (fig. 20), both in the "peninsula" dividing the space into north and south halves, and elsewhere in the space. All were removed at some point in time. It is thought that this occurred circa 1902, when the first part of the Plans Vault was built. The April 11, 1913, first-floor plan (fig. 29) shows that the line of plans cases had been replaced with library bookshelves by this date.

Replacement of Drafting Lamps

The original drafting lamps in the first story of the Planting Department were replaced by the existing double-jointed drafting lamps circa 1905. This is known because the original lamps had a round base, while the existing ones have a tripod-type base. In addition, the lamps are marked "O.C. White, Patented Sept. 11, 05." On the second story, the original drafting lamps remain attached to the ceiling; they were reconditioned and rewired in the mid-1980s.

Changes Circa 1909-1911

These alterations are shown in a plan dated 1909 (fig. 27), and as roughly drawn annotations added to the original circa-1900 construction drawings (figs. 19-23). The annotations are not dated, but considered as a group, they appear to date to circa 1911.

Closure of the Basement Stairway

The first dated alteration to the interior of the Planting Department was the removal of the first-story components of the southeast stairway to the basement. This alteration is proposed in figure 27, dated December 8, 1909. This drawing called for the following: the removal of the partition between the stairway and the adjacent coat room; the closure of the original window in the east wall of the stairwell; the removal of the shelving around the stairway; and the flooring over of the stairwell opening. It also called for the original doorway into the coat room to be closed; however, this doorway was never removed. (In recent years it has been covered over by wooden file cabinets.) Four shelves were installed along the south wall of the portion of the room formerly occupied by the stairway. Along the east wall was a projecting wood rack on which a dozen black cast-iron hooks are mounted. The ceiling and walls of the first-story area formerly at the basement stairway were covered with the same beaded matched boarding as was used in the finished basement room, rather than the "washboard" sheathing used elsewhere on the first story.

The closure of this stairway within nine years of the building of the Planting Department was probably due to the fact that serious ground-water problems made the basement unsuitable for either drawings storage or office space. Interestingly, the actual stairway does not seem to have been removed from the basement at that time. A presumably circa-1911 annotation on the circa-1900 basement plan (fig. 21) indicates that the stairway was extant but "not used." Later drawings suggest that the stairway was physically removed from the basement after 1913 and before 1925.

After the stairway was closed, other access to the west basement room was needed. Not surprisingly, another circa-1911 annotation on figure 21 shows that a doorway was cut in the wall between the two basement rooms.

Changes in Fenestration

The northernmost of the two second-story windows at the south end of the east wall was closed in 1911. This was due to the construction of a second story on the adjacent North Drafting Wing. The triangular connector portion of the North Drafting Wing received a new stairway to the new story, which caused its roof to be raised high enough to impact the window.

Conversely, a new window seems to have been added at the extreme east end of the second-story north wall. The circa-1900 north-elevation drawing (fig. 19) and second-floor plan (fig. 23) both have annotations—presumably dating to circa 1911—showing this work. The window was definitely in place by 1913 (fig. 30).

Creation of Supply Closet

A supply closet was built across the east end of the Print Room circa 1911, with the remaining east-wall window inside it. Again, the original second-floor plan (fig. 21) has a presumably circa-1911 annotation showing the closet, which was definitely extant by 1913 (fig. 30). The partition wall for this closet was constructed with cypress matched "washboard" sheathing. The closet doorway had a five-panel door. The panels were horizontal, recessed, and molded. The closet door was similar in design to the circa-1900 Planting Department doors; however, its proportions and the profile of its panel molding were slightly different. The closet door also had different hardware than the original Planting Department doors. It was hung with five-knuckle, rather than two-knuckle, butt hinges. The existing mortise lock on the closet door has no identifiable maker's markings, only the number 5214. It has circular brass roses and round brass knobs. A cutout above the existing lock indicates that this door originally had a box lock mounted on its inner side.

Installation of the Wagenhorst Blueprinter

Circa 1905 the Olmsted firm purchased a Wagenhorst Electric Blueprinter (figs. 14-15), which performed the same function as the sun-printing frames. The machine is marked with the patent date October 4, 1904. The blueprinter was installed in the southwest corner of the Printing Room. (Its location is depicted by yet another circa-1911 annotation on the original second-floor plan.) This placement required the removal of the westernmost sun-printing frame. The 1913 second-story plan (fig. 30) shows the other two sun-printing frames in their original locations, suggesting that they continued in at least limited use after the electric blueprinter was installed.

A search for the patent for the Wagenhorst Blueprinting machine located two patents issued to J.H. Wagenhorst for "Blue Printing Apparatus"—Patent No. 720, 862, issued February 17, 1903, and Patent No. 765, 406, issued July 19, 1904. No patent was found that was issued on October 4, 1904. The two existing patents illustrate and describe a blueprinting machine that is similar, if not identical, to the one in the Planting Department. Copies of these patents are included in Appendix G of this report.

The Wagenhorst printing apparatus consisted of a glass cylinder mounted on a metal stand. Inside the glass cylinder is an electric arc lamp, which is lowered down the cylinder to expose a drawing and a sheet of sensitized paper that were wrapped around the outside of the glass cylinder. The sheets were held in place by tacks and covered by a canvas, spring-activated curtain. In figure 14, both the tack holes and the curtain are clearly visible. The length of exposure time was regulated by a small device mounted at the top of the cylinder (fig. 15). Once exposed, the sensitized paper was washed in the same fixing bath as the drawings exposed with the sun printer.

Changes in 1913-1914

Figures 28-30 depict the appearance of the Planting Department in 1913. (Figure 28 has some annotations that seem to date to circa 1925, when a new boiler was installed in the basement.

Creation of First-Story Office

A small office was built in the southwest corner of the first story prior to April 1913 (fig. 29). Because it was not shown as part of the circa-1911 annotations on the original first-floor plan, it is thought to be slightly later. The office measured approximately 5 by 8 feet and was constructed with cypress matched "washboard" sheathing. Access to it was through a doorway in its northeast corner.

Installation of Sprinkler System

In 1914, when the sprinkler system was installed, its alarm bell and overflow pipe were located at the west end of the exterior south wall of the first story of the Planting Department. The sprinkler system's compressor was located in the basement. The alarm bell for the Boston Automatic Fire Alarm system was located on the west exterior wall.

Changes Circa 1925-1930

Building of the Fire Wall

A number of changes were made in 1925. A second story was added to the Clerical Department, which abutting the east wall of the Planting Department. At that time, the east exterior wall of the Planting Department was dismantled and replaced with a brick fire wall that ran between the Clerical Department, the Planting Department, and the North Drafting Wing. The building of the fire wall caused the remaining window in the second-story east wall of the Planting Department to be closed. This window had been in the back wall of the closet on this wall. The removal of the window allowed shelving to be built along the new, brick back wall of the closet.

With the addition of the second story of the Clerical Department, and the construction of the fire wall, the east side of the Planting Department roof was joined to the roofs of the Clerical Department and North Drafting Wing. The junction of these roofs was flashed with a copper roof. This allowed the removal of the original wood gutter from the east side of the Planting Department roof.

Installation of an Ammonia-Vapor Closet

Prior to circa 1925, the firm relied on the washing and potassium-bichromate process to develop the prints made in the Wagenhorst blueprinter. This process was replaced circa 1925 by the use of an "Ozalid" ammonia-vapor closet to develop the drawings (fig. 13). The ammonia-developing process had the advantage that it was a dry process. Copies could be used as soon as they were removed from the ammonia-vapor closet; no time had to be allowed for mounting the drawings on the racks or for drying.

The closet was installed in the southeast corner of the Print Room. This would have required the removal of the sun-printing frame at the east window. It seems likely that both this and the other remaining sun-printing frame had already been removed by this time, since they had been obsolete since circa 1905, although there is no evidence to that effect.

The ammonia-vapor closet measured 2 feet 8 1/2 inches by 3 feet and extended from the floor to the ceiling. The three-panel door to the closet was the same as doors hung in the second story of the Clerical Department circa 1925. The panels were recessed and molded. The door was hung with small five-knuckle butt hinges unlike any of the other hinges used in the Planting Department.

The interior of the ammonia-vapor closet contained a metal frame; the upper portion of the frame was enclosed with sheets of galvanized metal. The frame was painted green and labeled "OZALID DEVELOPER, PATENT APPLIED FOR, EUGENE DIETZEN, CHICAGO." Mounted in the southeast corner of the enclosed portion of the metal frame was a metal chamber 8 inches square by 4 feet high. A sliding door at the bottom of this chamber enabled it to be sealed. An opening in this door, through which a three-quarter-inch rubber hose ran, allowed this chamber to be filled with ammonia vapors.

The process worked as follows. An original drawing and a sheet of sensitized paper were exposed together on the usual way, with the arc lamp. Once exposed, the print was rolled, placed in a tube, and set inside the metal chamber inside the closet. The chamber was then sealed and filled with ammonia vapors to develop and stabilize the sensitized paper. The ammonia vapors were forced from a tank on the floor of the closet into the chamber by a small pump at the north side of the closet. This pump is marked "THE PEERLESS ELECTRIC COMPANY, WARREN, O.," and was controlled by a switch in the north wall of the ammonia closet. The west wall of the closet had a circular vent opening connecting to a length of galvanized downspout. This ran over to the ventilator at the center of the Planting Department roof. A specific type of paper had to be used with the ammonia developer. The final copy is a white sheet with blue lines, in contrast to the blue sheet with white lines produced by the potassium-bichromate process.

Improvements to Heating System

The heating system was converted from steam to hot water at some point. It appears to have been done circa 1925, when a new coal-fired boiler was installed in the southeast corner of the Planting Department basement. This replaced the original coal-fired boiler in the northwest corner of the basement. The standing floor radiators in the Planting Department, which appear to be post-original additions to the heating system, may have been added at this time.

The installation of the new boiler is shown by annotations, presumably dating to circa 1925, on the 1913 basement plan (fig. 28). Another annotation indicates that the unused stairway to the first story, which was still extant in 1913, was "gone" by circa 1925.[7] No physical evidence of the original basement stairway remains.

In 1930 a humidifier was installed along the west wall in the first story of the Planting Department. This was an "Aqualator" unit similar to those installed in the main house and the North Drafting Wing at that time. It was located on the east end of the middle partition wall (fig. 3).

Roof and Gutters

The slate roof of the Planting Department was installed circa 1927. An additional downspout may have been added to the middle of the south wall at this time. The original downspouts remain at the east and west ends of the south wall (see figure 1), but an additional one was installed at some point in the middle of the south wall (compare figure 26).

Changes in the 1960's-1970's

Interior Elements

The interior of the Planting Department underwent another series of minor changes in the 1960's and 1970's. In the first story, the westernmost of the five circa-1905 drafting lamps in the north half of the building was removed. On its base was constructed a wood frame, on which were mounted multiple receptacles. These receptacles were used for modern, table-mounted drafting lamps.

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[7] Figure 27, dated October 15, 1913, shows the stairway; however, annotations made on the plan circa 1925—when the new boiler was installed in this vicinity—indicate that it was gone by that time.

There is some indication that wood ceiling fans were used prior to the 1960's, when they were removed. Nothing is known about them, including their exact locations. It is possible that adequate documentation for their reproduction may be found in the future.

Another alteration made to the first story of the Planting Department circa 1970 was the removal of some of the library shelving. The shelving running down the center of the room, on the west side of the chimney, was removed and destroyed.

Unlike the first stories of the Clerical Department and the North Drafting Wing, most of the walls and ceiling of the first story of the Planting Department were not painted with latex paints in the 1960's. The exception was the coat room and men's toilet, which were painted green.

Improvements to Heating System

The coal-fired, hot-water boiler installed in the southeast corner of the basement circa 1925 was replaced circa 1960 with an oil-fired boiler, also located in the southeast corner. The new boiler heated the entire office wing. With the installation of this boiler, the coal bin in the southwest corner of the basement was removed, and two oil tanks were installed.

Changes by the National Park Service

Improvements to Sprinkler System

The sprinkler system's compressor, located in the northwest corner of the Planting Department basement, was replaced in 1982 by contract.

Roof Contract of 1982

Random broken slates were replaced as part of the 1982 roof contract. The area where the roofs of the North Drafting Wing, the Clerical Department, and the Planting Department come together was also repaired at this time: the existing copper flashing and slates on the east hip of the Planting Department roof were removed, and new 20-oz. copper and new slates were installed.

Boiler Replacement Contract of 1983

Several alterations occurred as part of the office boiler replacement contract during the summer of 1983. Two new oil-fired boilers were installed in the southeast corner of the Planting Department's basement. These boilers became the heat source for all of the office buildings. A new concrete floor was poured over the existing basement floor.

An attempt was made at this time to deal with the basement's serious moisture problem. The source of the water was twofold: a spring located in front of the south basement door, and an underground stream that enters the building near its southeast corner. A sump pump was installed at the location of the spring, and connected to the main office drain. Also, a channel was built along the east wall of the basement to contain and divert the stream into the main office drain. (This project was aided by the pouring of the new concrete floor.)

Also in 1983, the concrete slab at the bottom of the south-wall areaway was replaced, and a drain was installed. The south-wall basement window well was repaired as part of this work. The sides of the window well were extensively rebuilt, but the well's original appearance was generally retained. The exception to this was the addition of a metal grate placed over its top. The south basement doorway and door also were rebuilt, as was the window in the south wall of the basement.

Restoration of Drafting Lamp

The historic adjustable drafting lamp removed from the first-story drafting area was restored as part of the 1983-1984 electrical rewiring contract. The missing lamp was the westernmost of five historic drafting lamps along the north side of the drafting area. The wood frame and receptacles that had been constructed on the former base of the historic lamp were removed, as were the modern drafting lamps they served, in the course of the restoration.

Existing Conditions

Exterior Elements

Virtually no changes have been made to the exterior of the Planting Department, which appears to be in good condition structurally. However, there are several areas that should be opened and checked for deteriorated members. These areas include: the northeast corner post and east end of the north elevation, the casings and sills of the north-wall basement windows, and the north wall plate. All of these areas have had extensive contact with moisture over an extended period of time.

The foundation will require selective repointing. The south areaway will require partial rebuilding. The basement window wells are in good condition. The south one was rebuilt in 1983; the west and north ones were rebuilt with portland cement at an unknown date. However, the west and north basement windows themselves are in need of extensive repairs.

On the first and second stories, numerous clapboards and pieces of wood trim are cracked and rotted and will require replacement. All of the windows are in need of extensive repairs. The gutters need to be repaired and may require some resetting and replacement. The cornice fascia board on the north wall is rotted and will have to be replaced.

The circa-1927 slate roof shows signs of aging but is generally in good condition. The chimney still needs to be repointed; the roof ventilator needs general repair.

Interior Elements

The interior of the Planting Department basement is in good condition. Some of the original woodwork in the finished east room remains along the north wall. These include pieces of beaded matched-board wall sheathing and the sashes of the window (there were no casings originally). The basement has always had a serious moisture problem. The source of the water is twofold: a spring located in front of the south basement door and an underground stream that enters the building near its southeast corner. The sump pump installed in 1983 at the location of the spring, and the channel built along the east wall to contain the stream, have significantly reduced—but not eliminated—the moisture problem in the basement.

On the first and second stories, most of the critical historic building fabric remains intact and in good repair. On the second story, the west doorway to the Print Room, and the doorway to the Developing Room, are missing their doors. Also, minor repairs will have to be made to the printing equipment to improve its interpretative effectiveness. For example, the handle on the lower hose faucet on the north wall of the Developing Room is missing.

Recommendations

Exterior Elements

The exterior preservation work on the Planting Department will involve repointing the stone foundation and the partial rebuilding of the south areaway. Wooden elements to be repaired or replaced include: sills, plates, corner posts, clapboards, corner boards, and window casings and sashes. Gutters should be repaired and correctly pitched. Once repaired, all the exterior surfaces should be primed and painted. The clapboards should be painted red, the wood trim dark green, and the window sashes black. The slate roof should not require any work for several years. The chimney should have its top four inward-tapering courses of brick rebuilt, and should be repointed, repainted, and capped. The missing and broken ventilator louvers should be replaced, and a mesh screen installed behind the louvers to prevent small animals from getting inside the ventilator.

Interior Elements

No work is recommended for the basement at this time. However, the moisture problem should be monitored to insure that it is being adequately controlled by existing measures.

On the first story, the modern latex paint on the walls and ceiling of the coat room and men's toilet should be stripped and the original shellac finish restored. The existing bathroom fixtures, the only historic bathroom fixtures remaining in the office, should be retained and made operative. The bookshelves on the west side of the chimney should be reproduced and reinstalled. The door to the small southwest corner office should be rehung.

On the second story, the missing or broken elements of the printing equipment should be repaired or replaced. At the present time, the elements that are missing make it difficult to explain how this equipment functioned. The west doorway to the Print Room, and the doorway to the Developing Room, should have their missing doors rehung.

All the woodwork in both the first and second stories should be cleaned, and areas where the shellac finish is damaged should be repaired. All of the metal hardware should also be cleaned and treated. The hardware in the Planting Department is significantly corroded due to the ammonia vapors used for printing of drawings and plans.

FIGURES FOR THE PLANTING DEPARTMENT

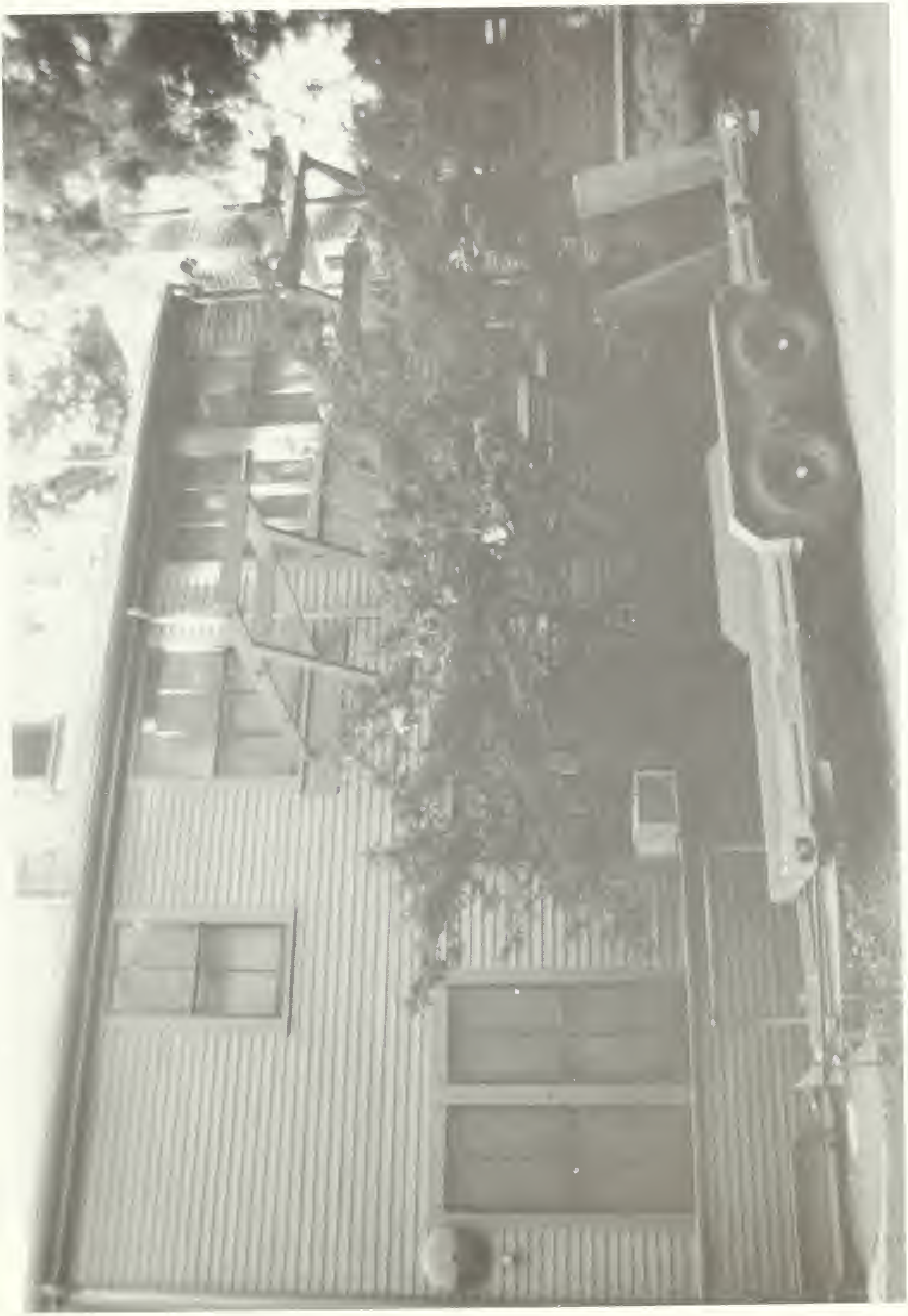

Figure 1. Planting Department: South elevation, 1989.

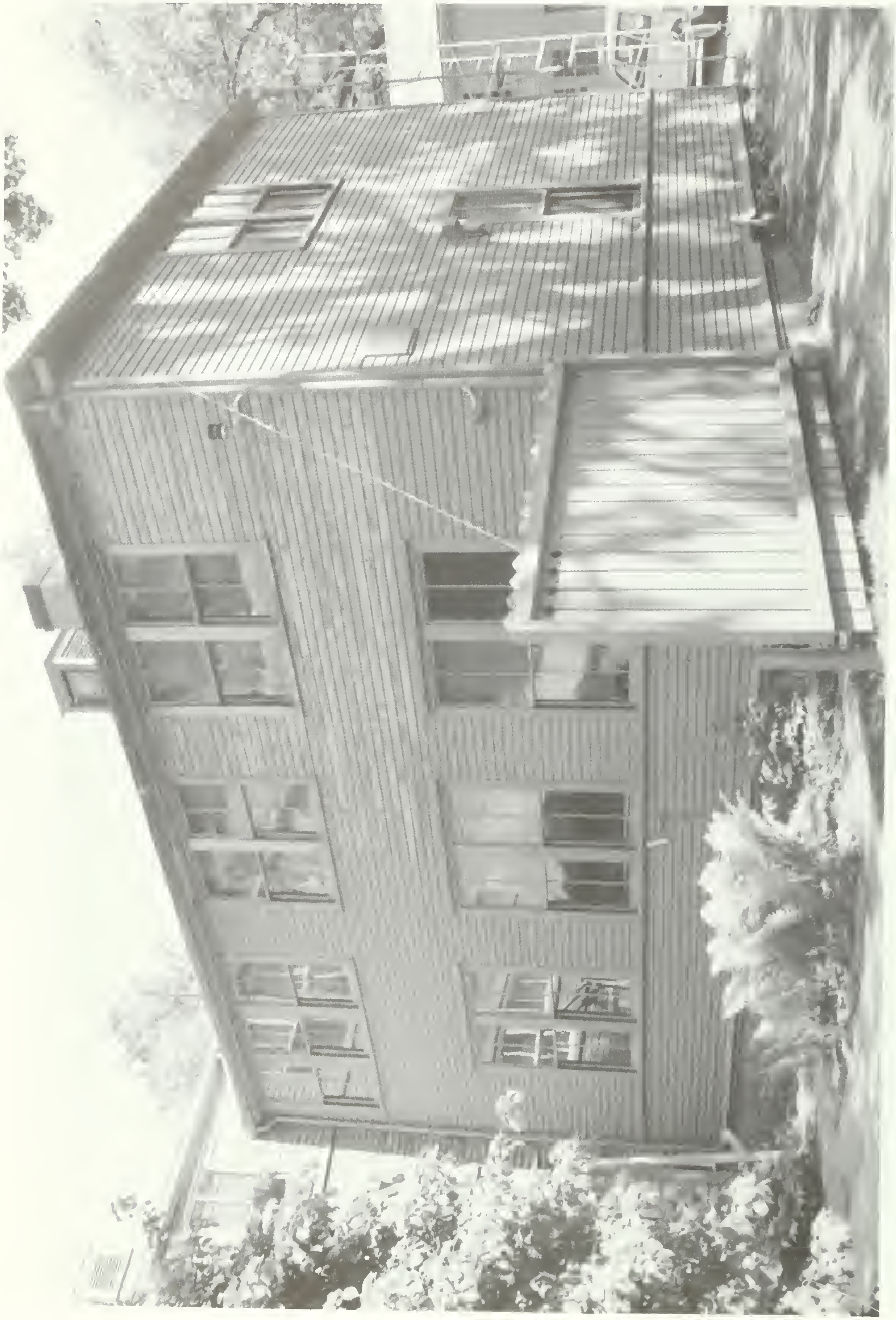

Figure 2. Planting Department: North and west elevations (1986).

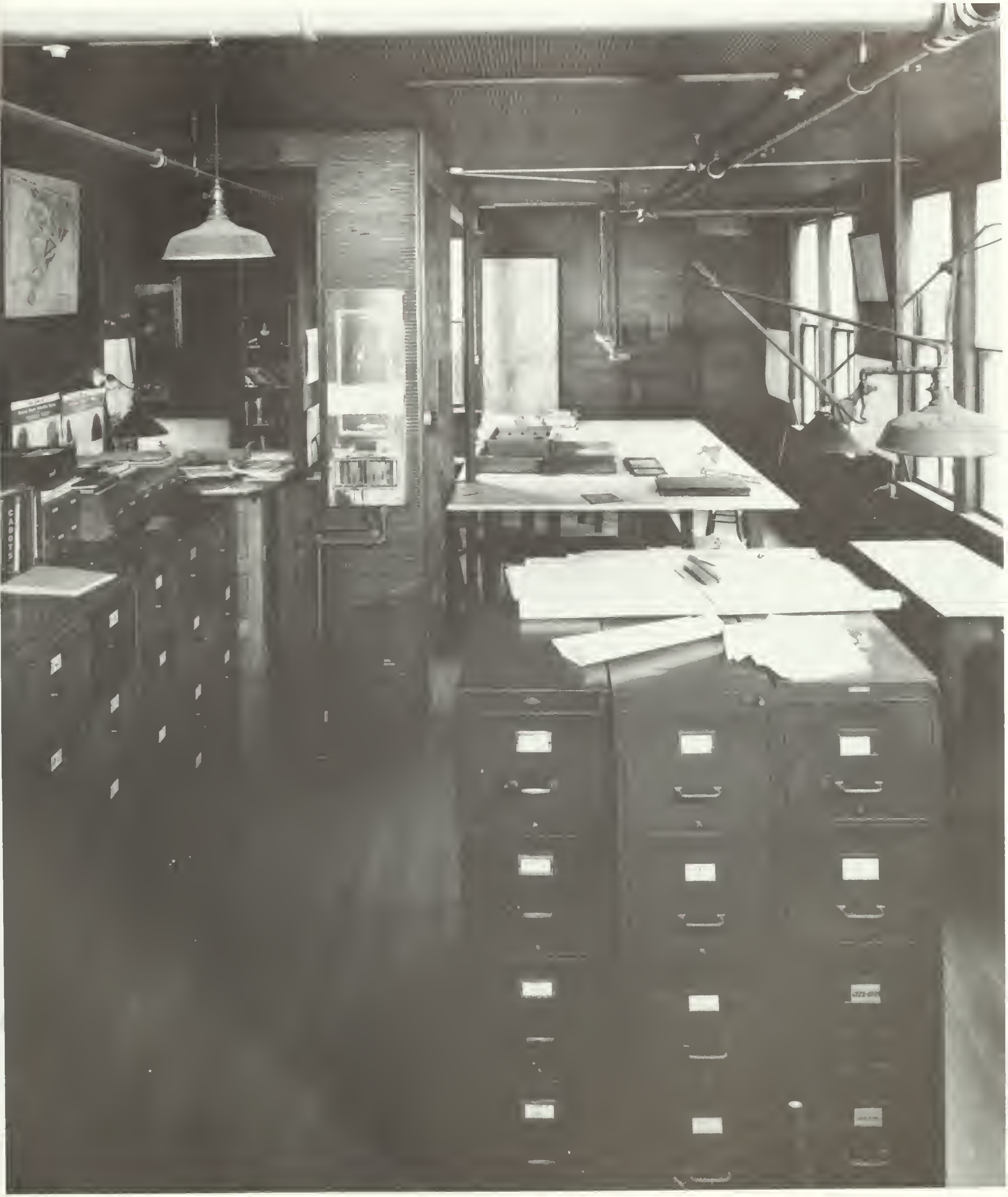

Figure 3. Planting Department: First story, main room, facing west (1980).

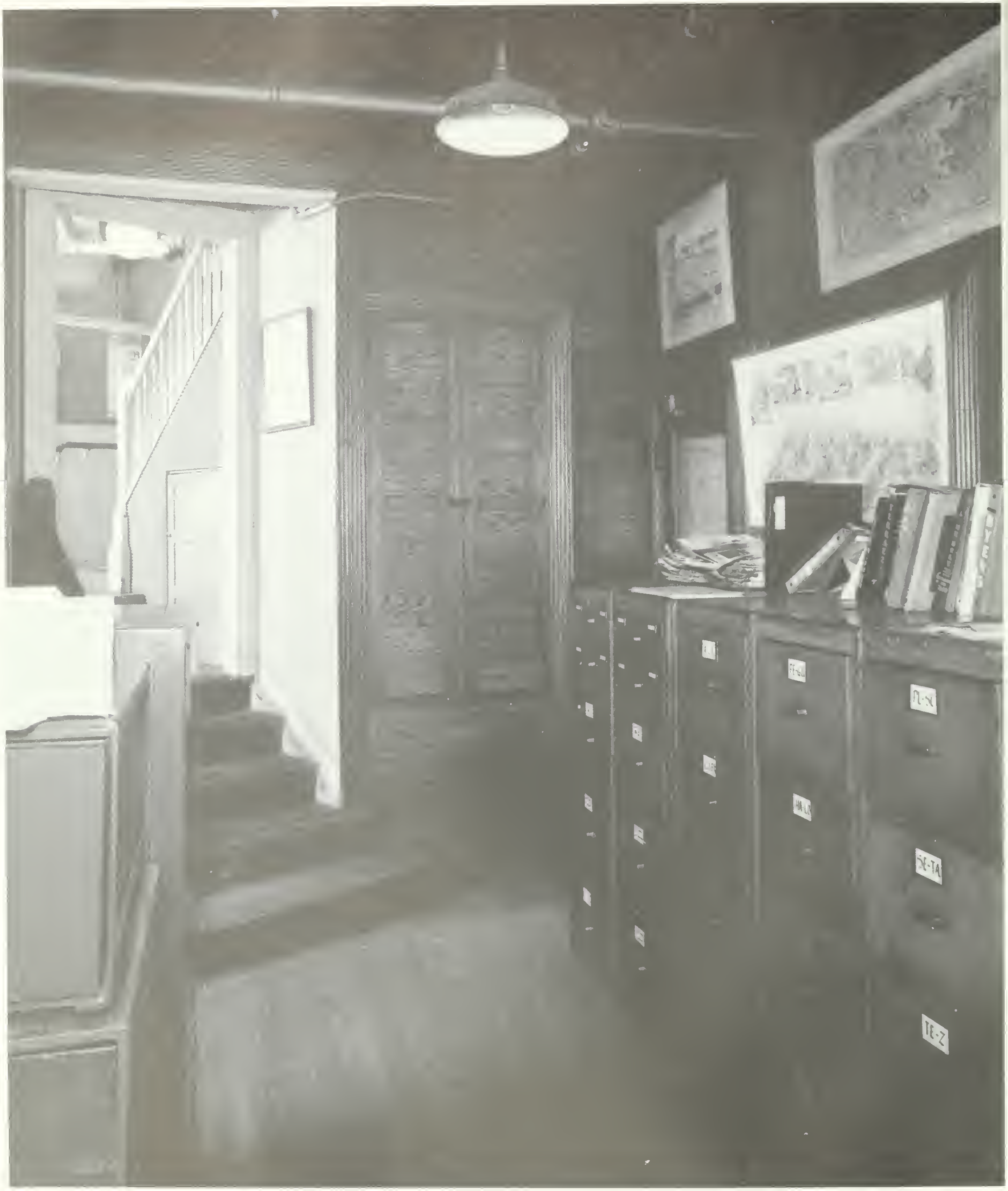

Figure 4. Planting Department: First story, main room, facing east (1980).

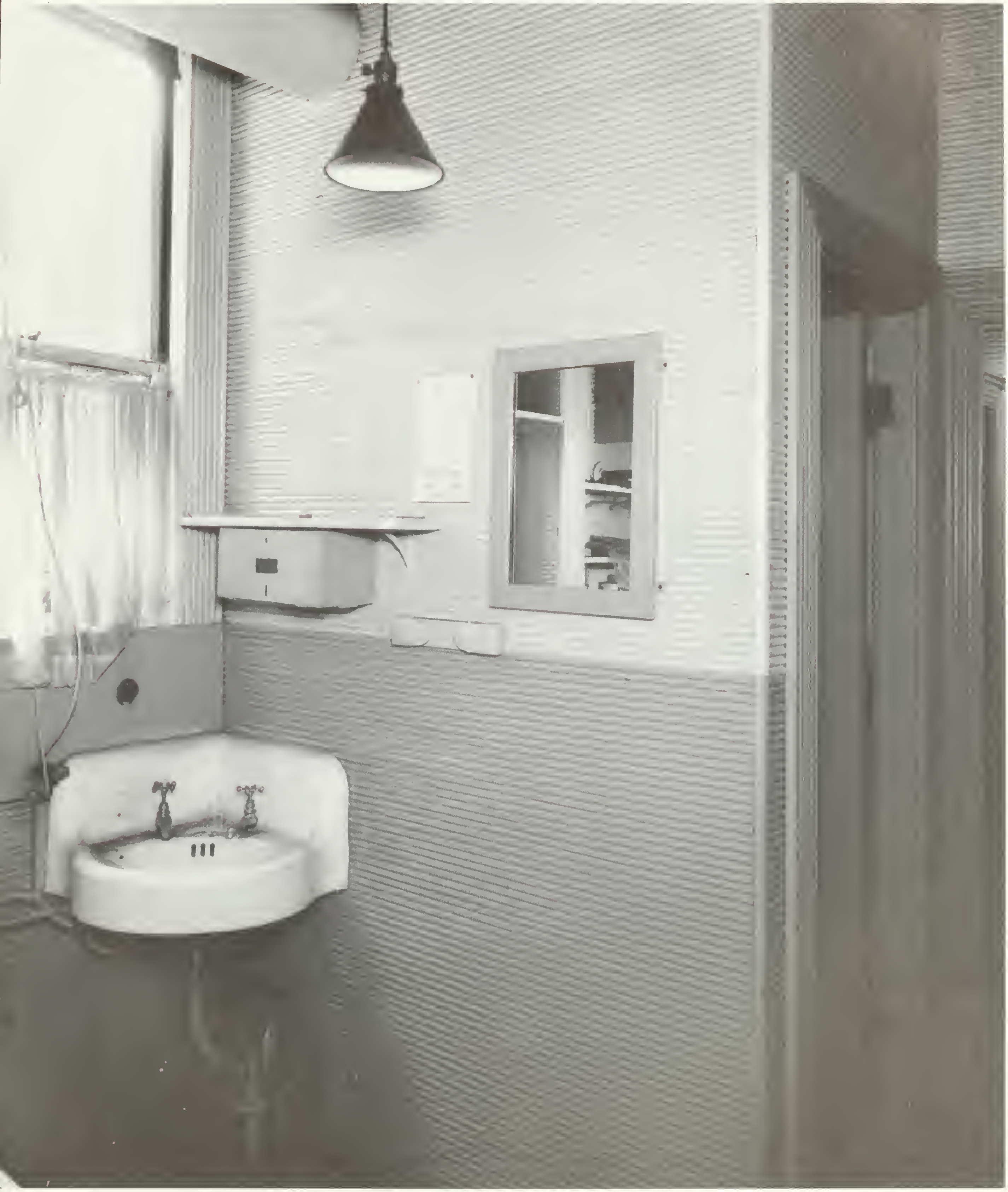

Figure 5. Planting Department: First-story toilet room, 1980.

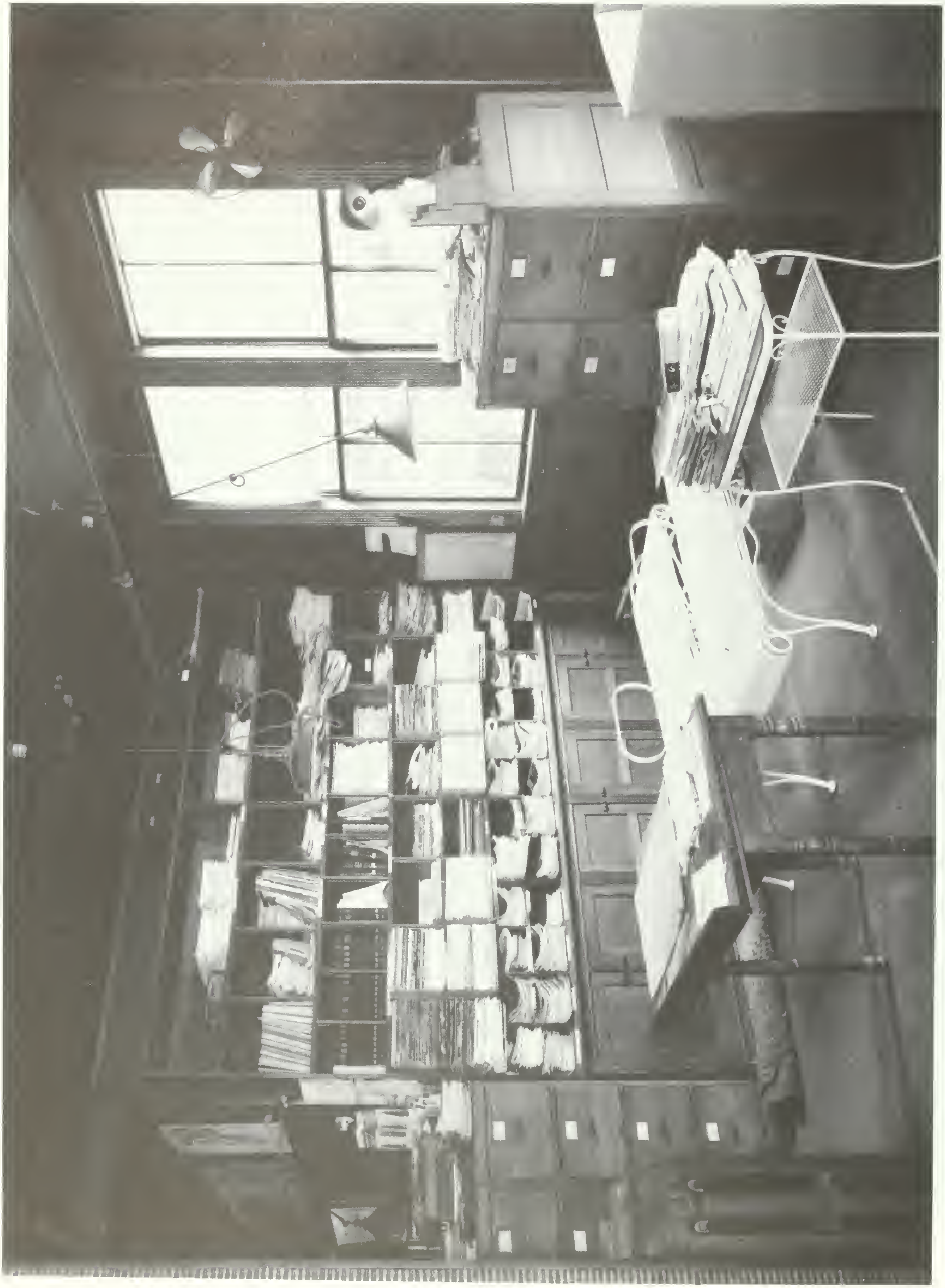

Figure 6. Planting Department: First story, west end of main room, facing southeast (1980).

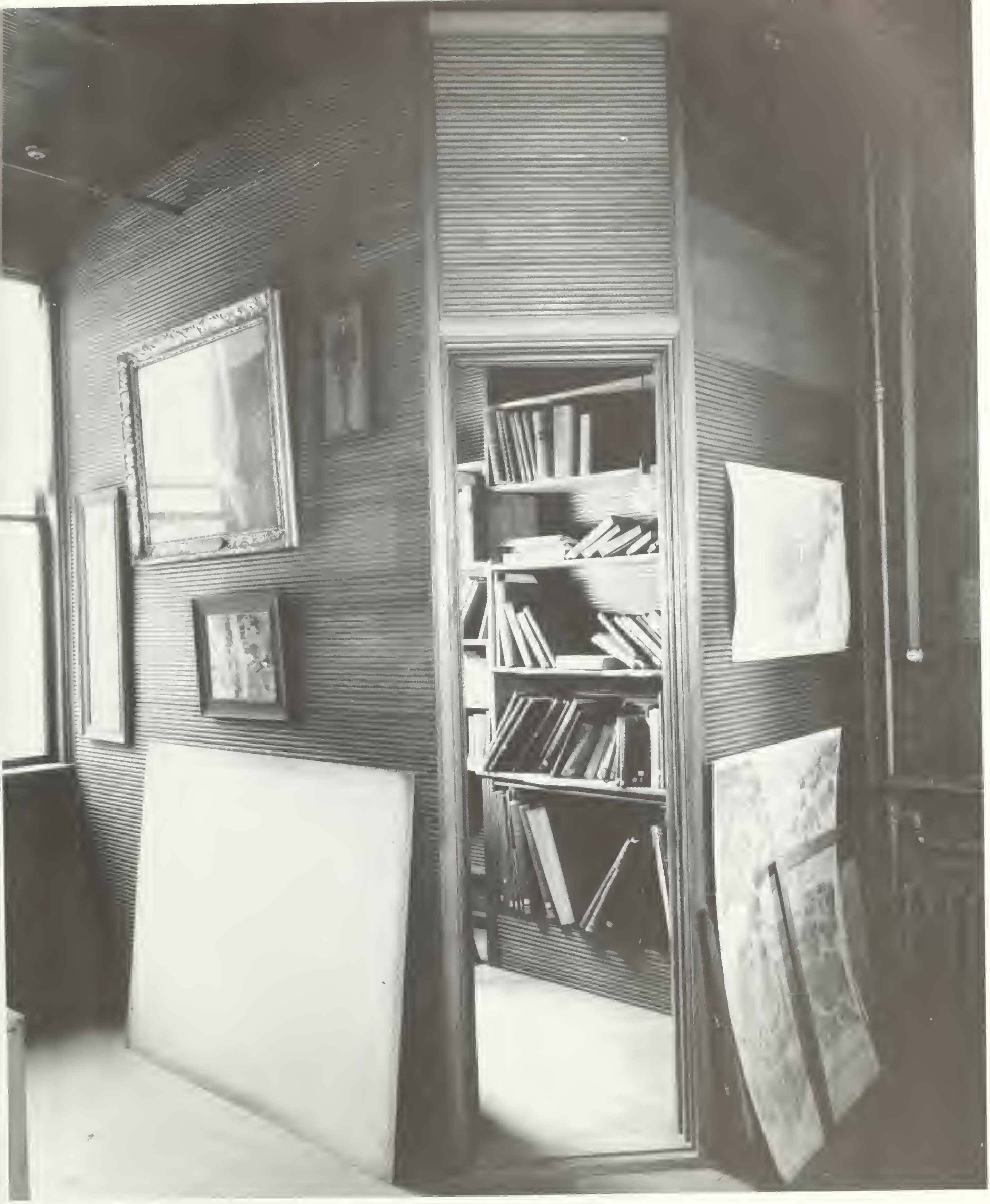

Figure 7. Planting Department: First story, southwest corner room (1980).

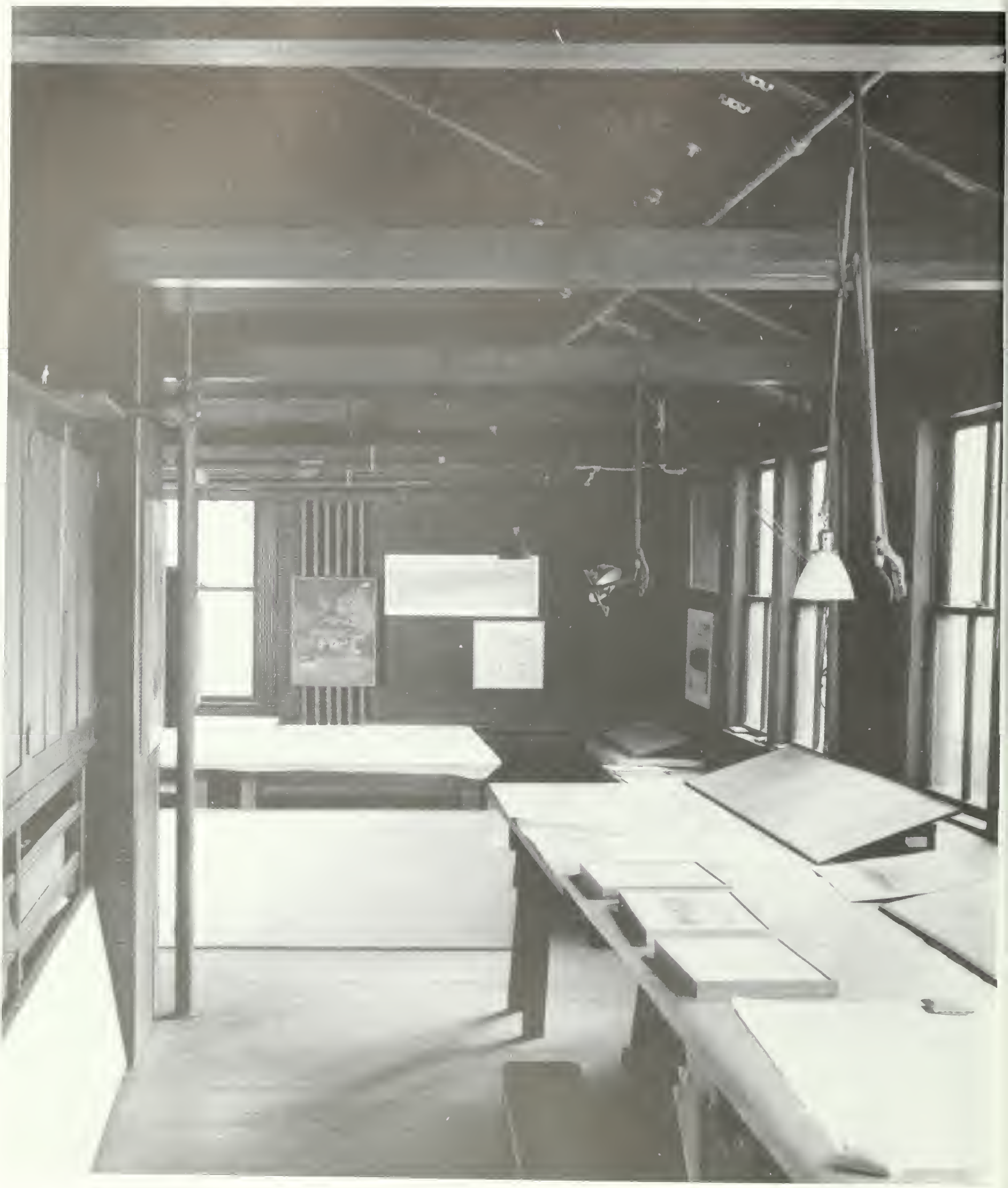

Figure 8. Planting Department: Second story, main room, facing west (1980).

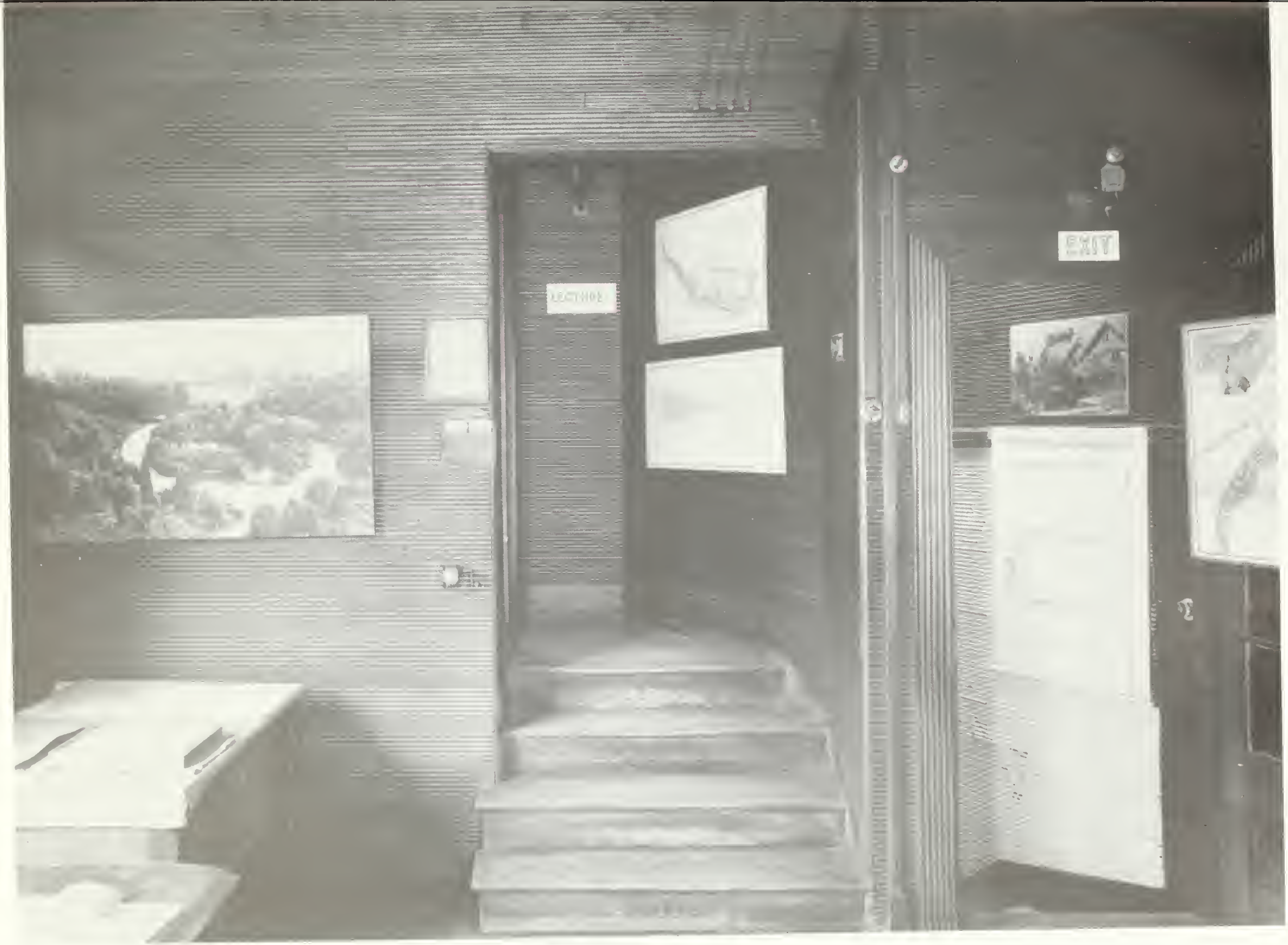

Figure 9. Planting Department: Second story, facing east toward stairway up to second story of North Drafting Wing (1980).

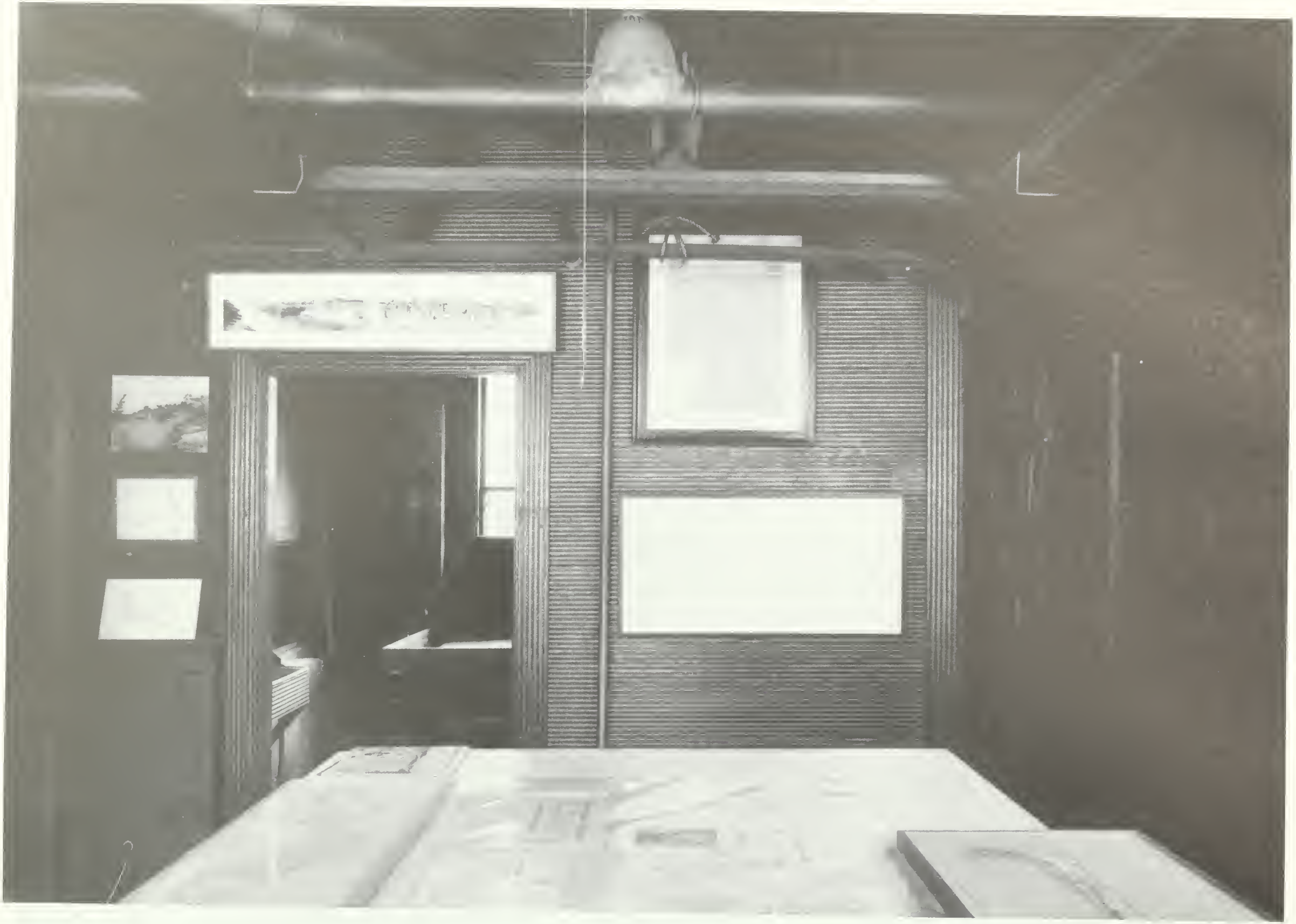

Figure 10. Planting Department: Second story, west end of main room, facing south toward Developing Room, left, and Drying Room, right (1980).

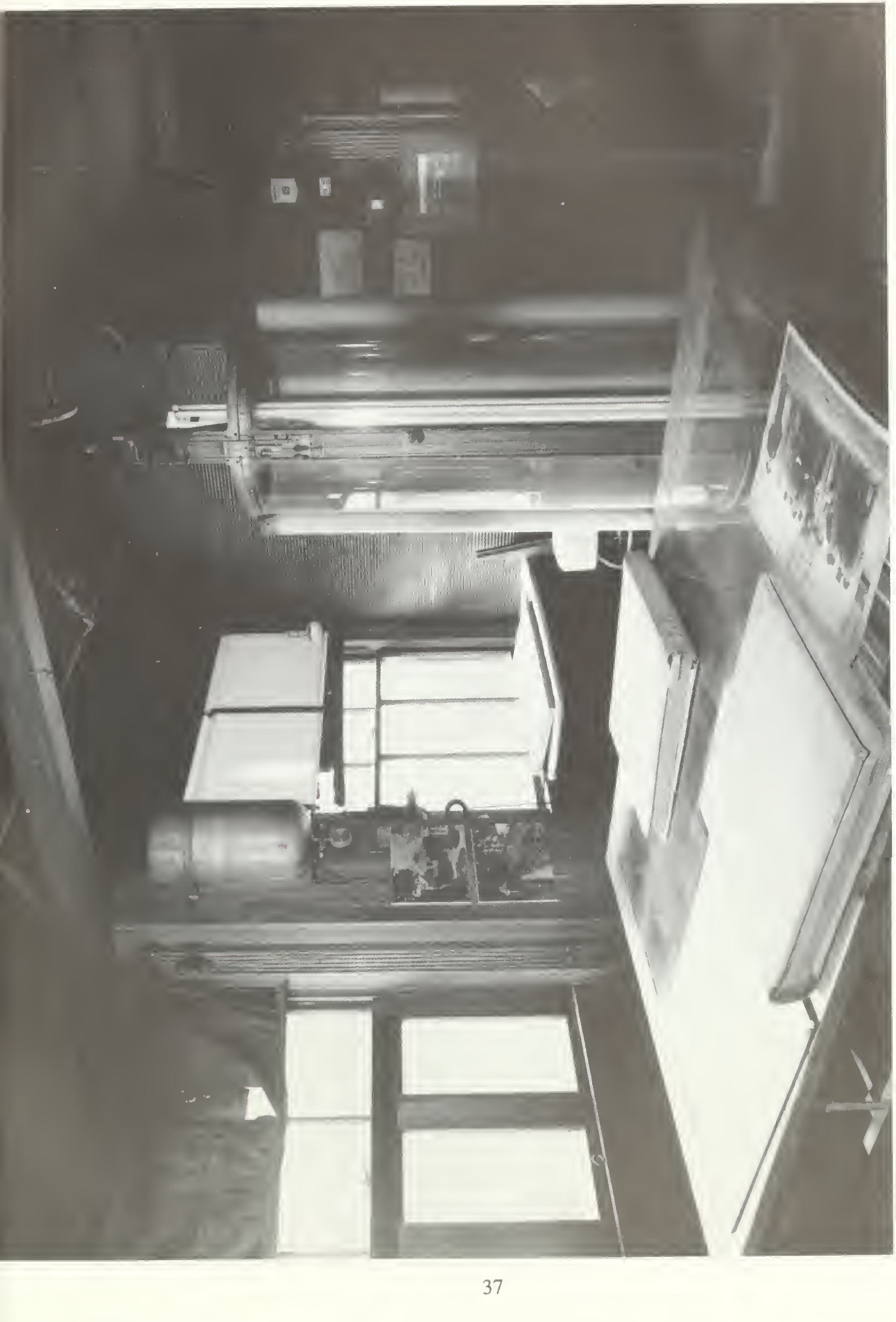

Figure 11. Planting Department: Second story, Print Room, facing southwest (1980).

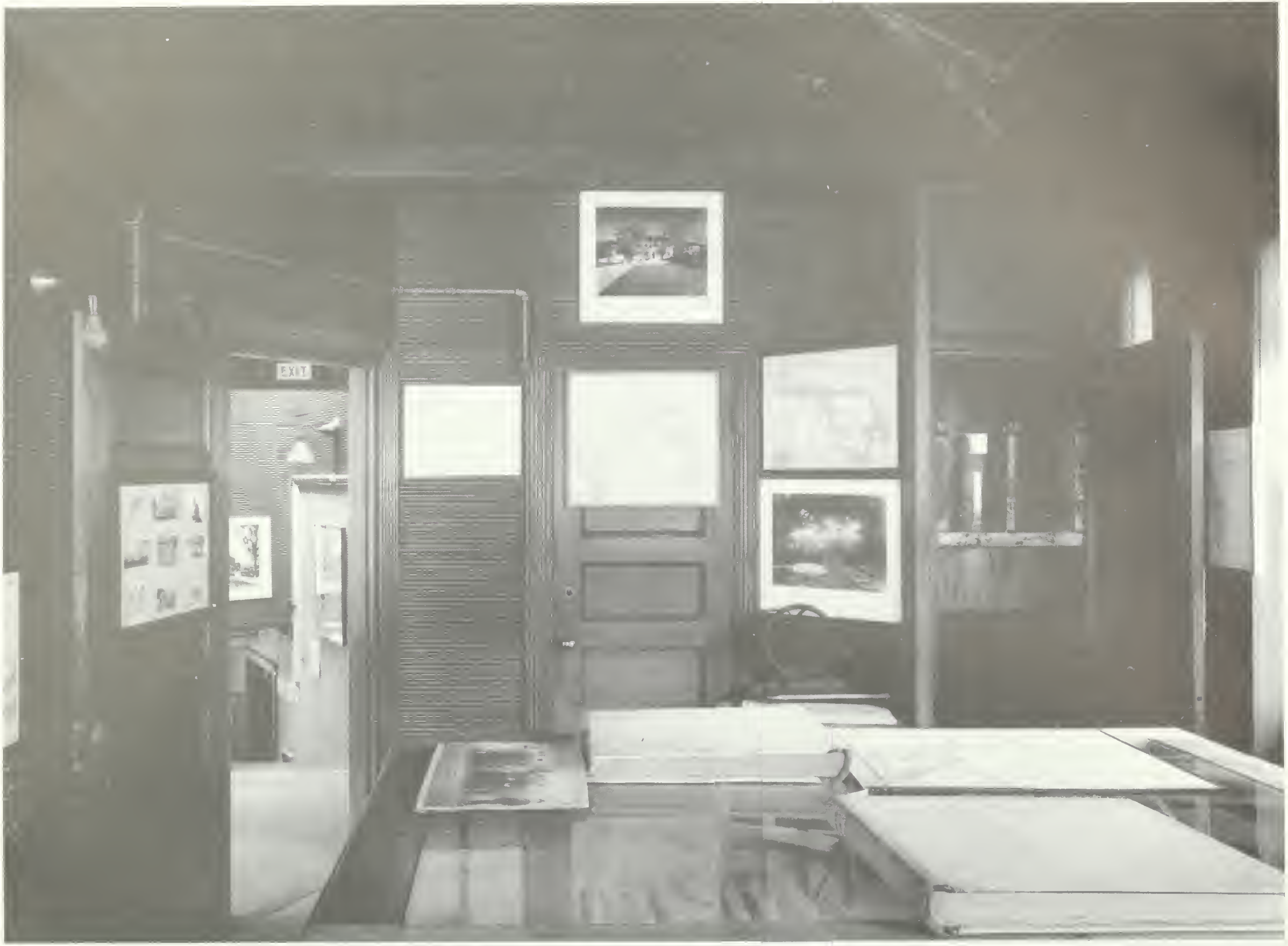

Figure 12. Planting Department: Second story, Print Room, facing east (1980).

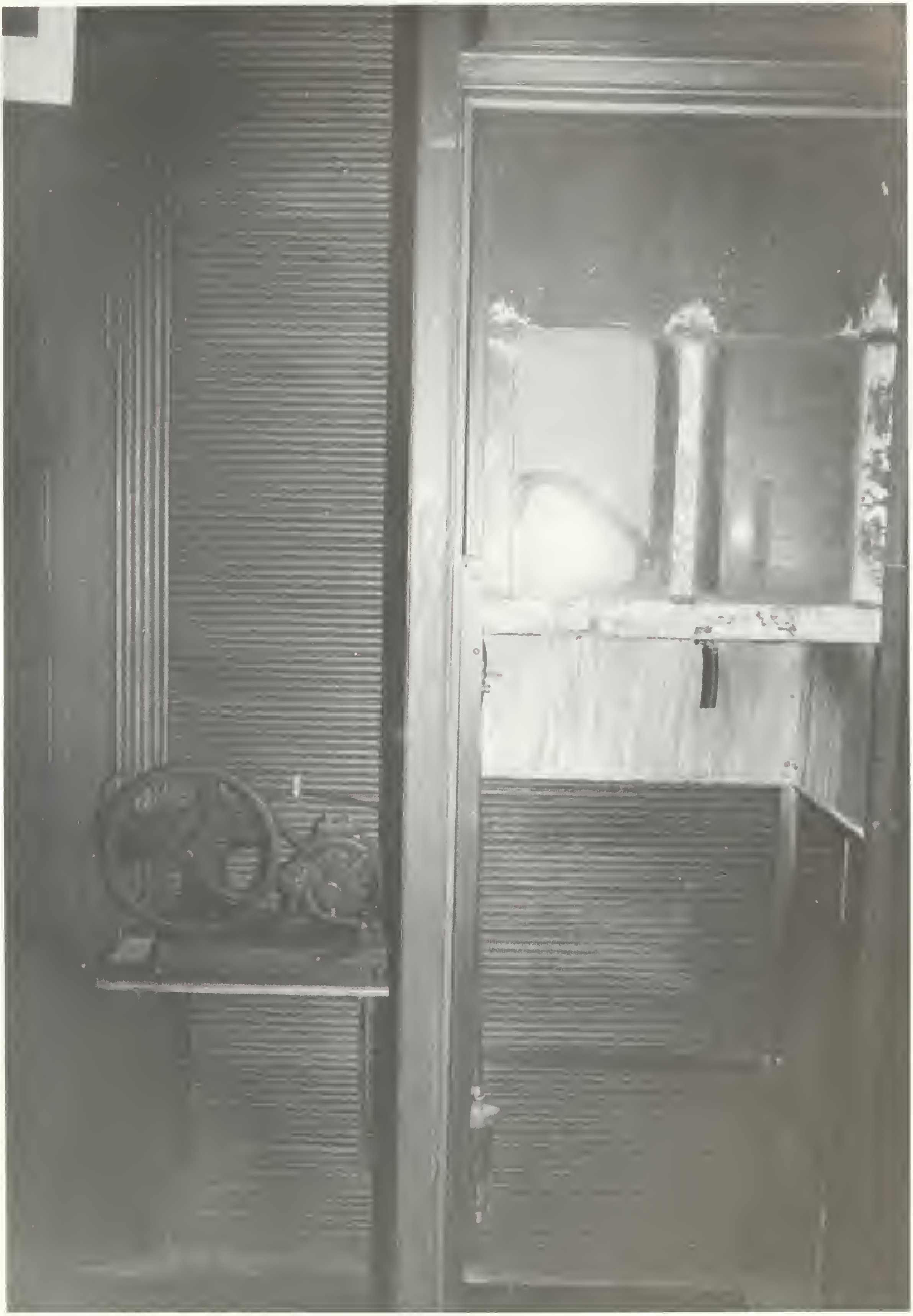

Figure 13. Planting Department: Second story, Print Room, ammonia developing closet, 1986.

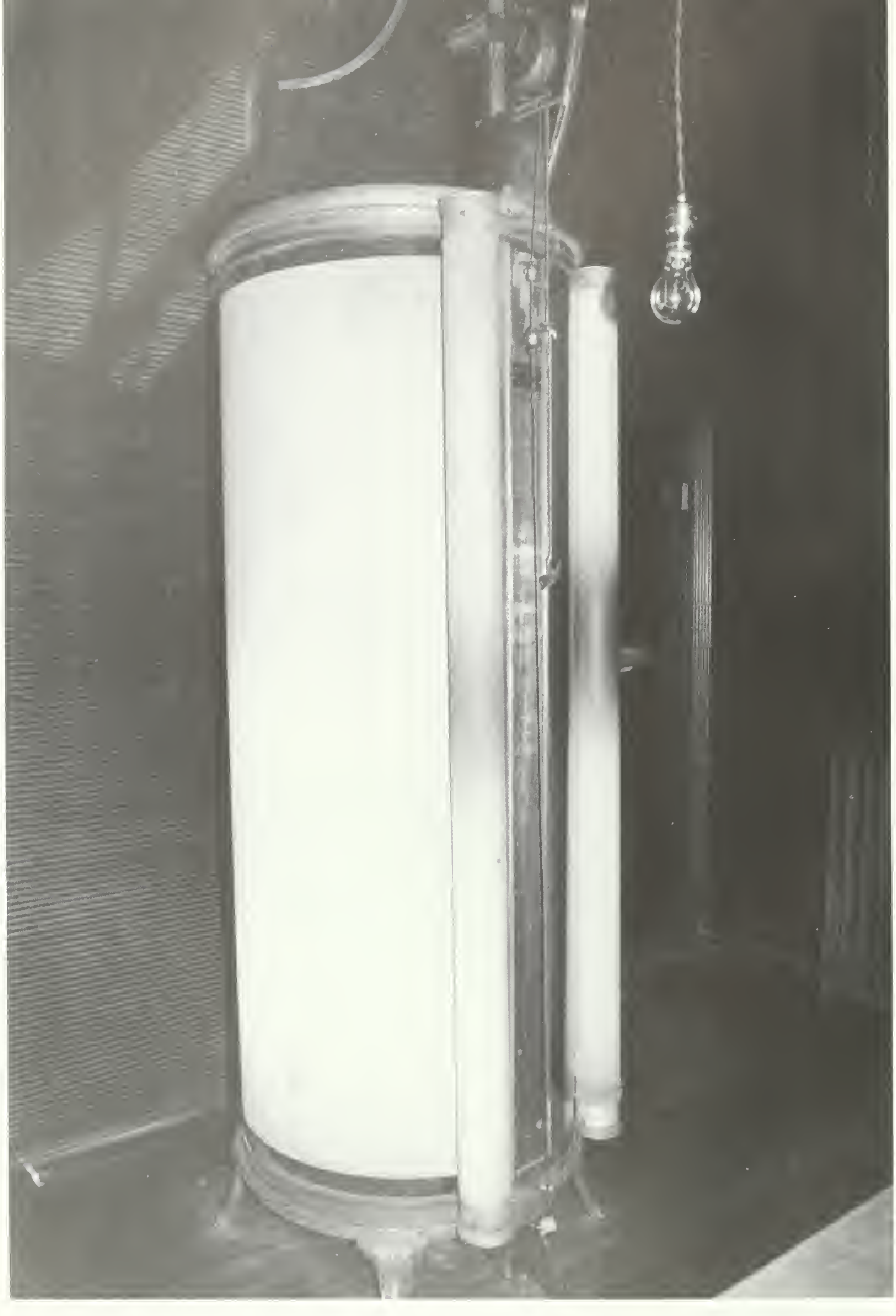

Figure 14. Planting Department: Second story, Print Room, Wagenhorst Electric Blue Printer, 1986.

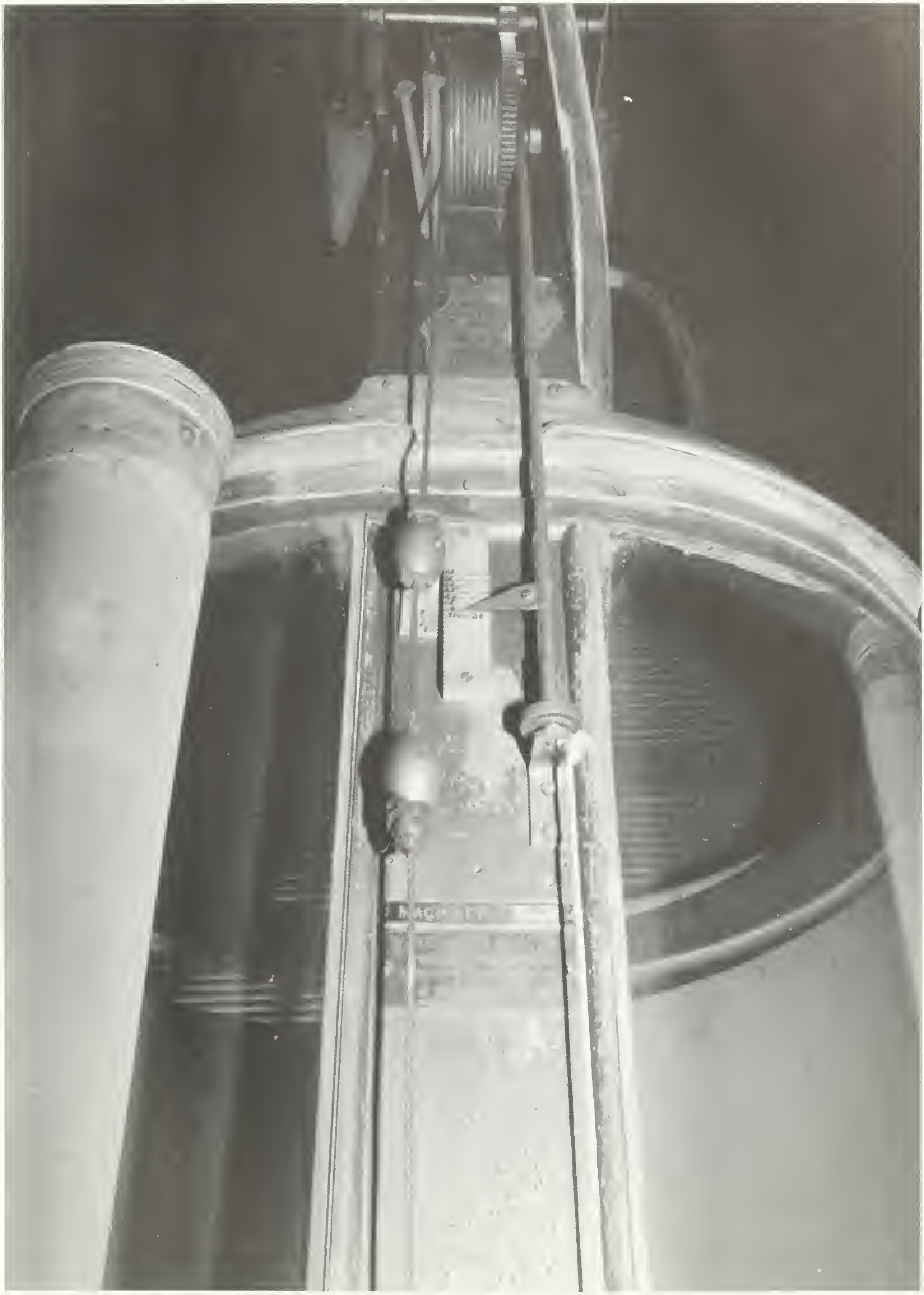

Figure 15. Planting Department: Second story, Print Room, Wagenhorst Electric Blue Printer, showing weights and pulleys that controlled drawing exposure time (1986).

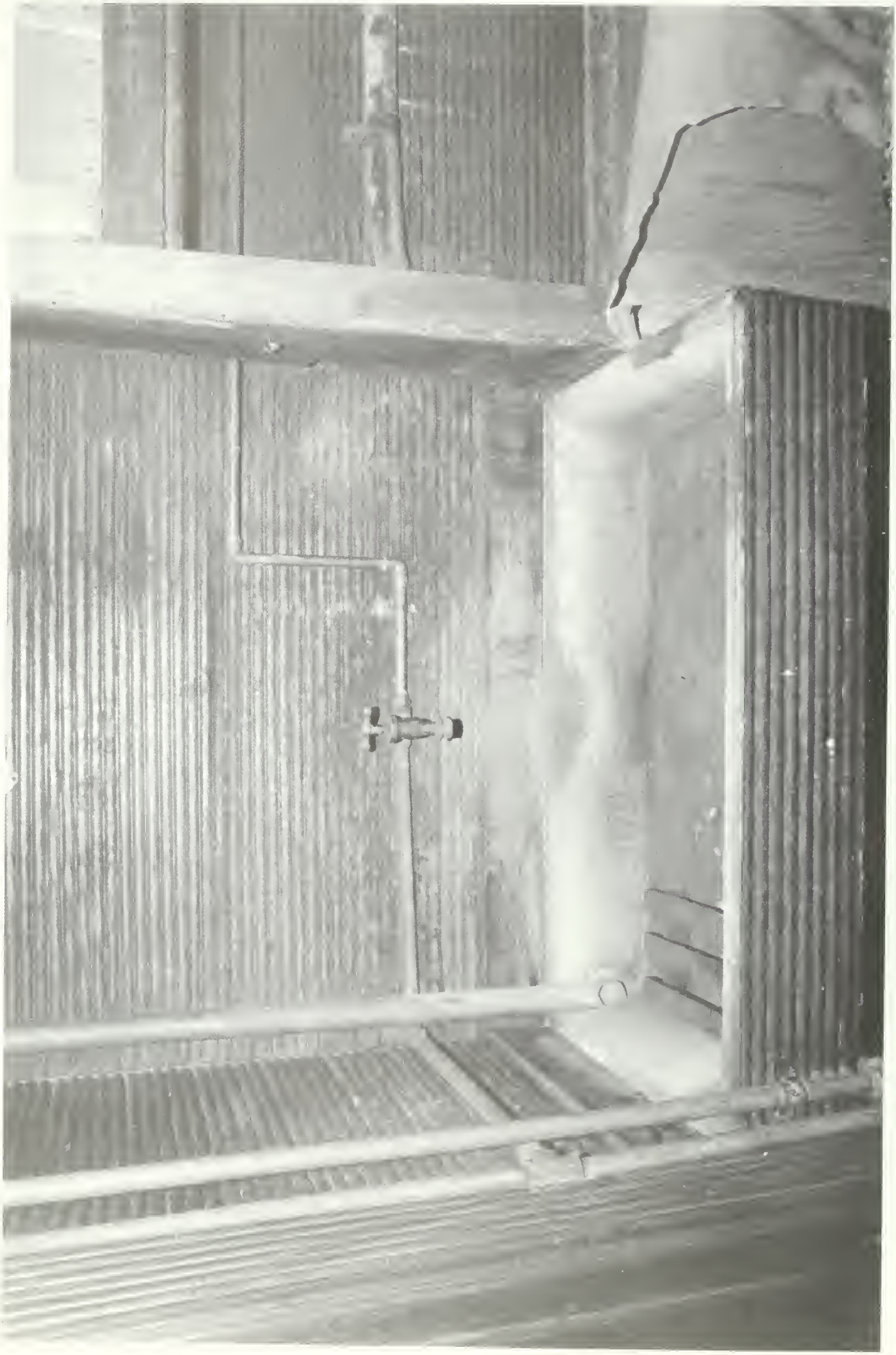

Figure 16. Planting Department: Second story, Developing Room, sink in northeast corner (1986).

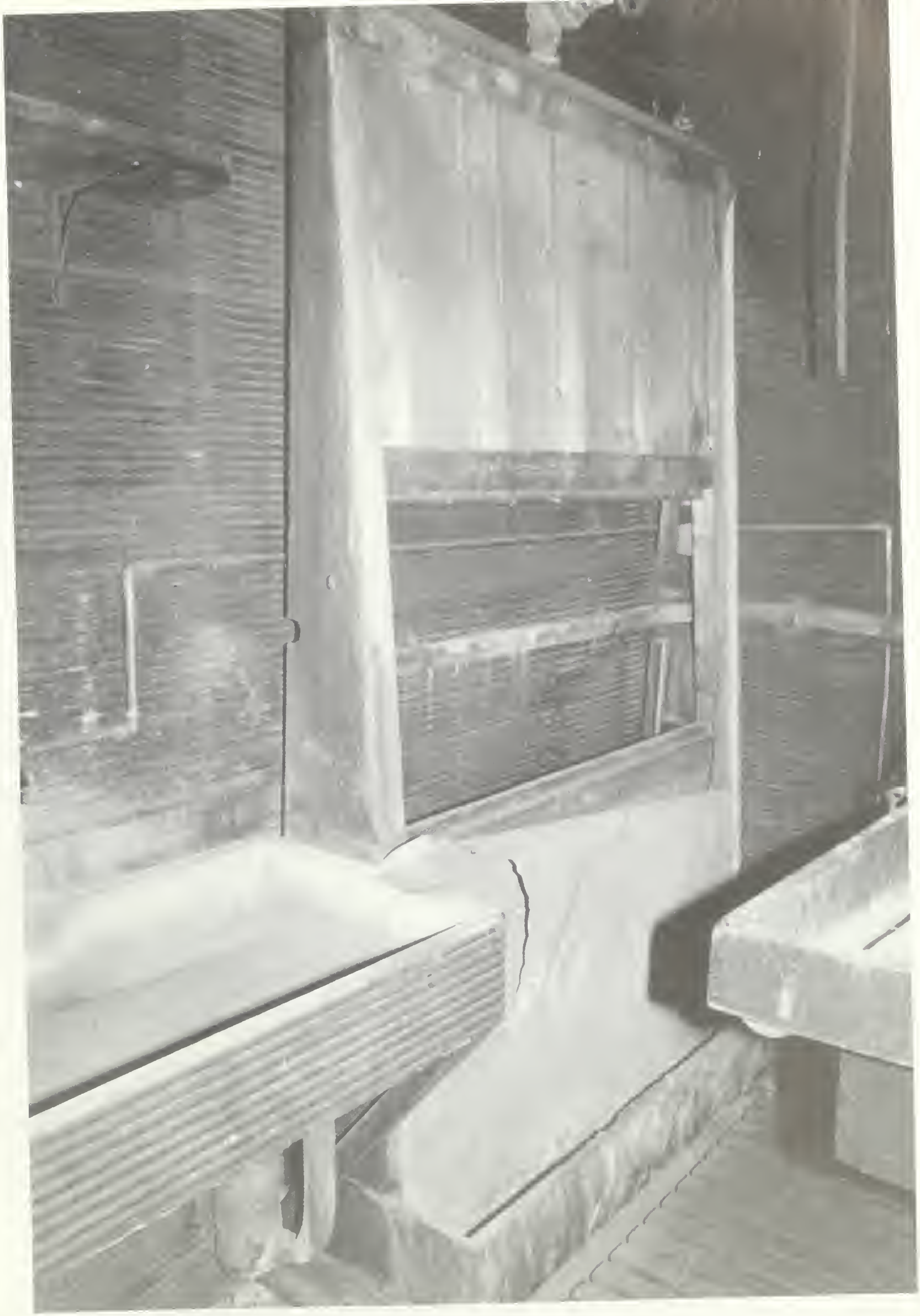

Figure 17. Planting Department: Second story, Developing Room, washing rack in southeast corner (1986).

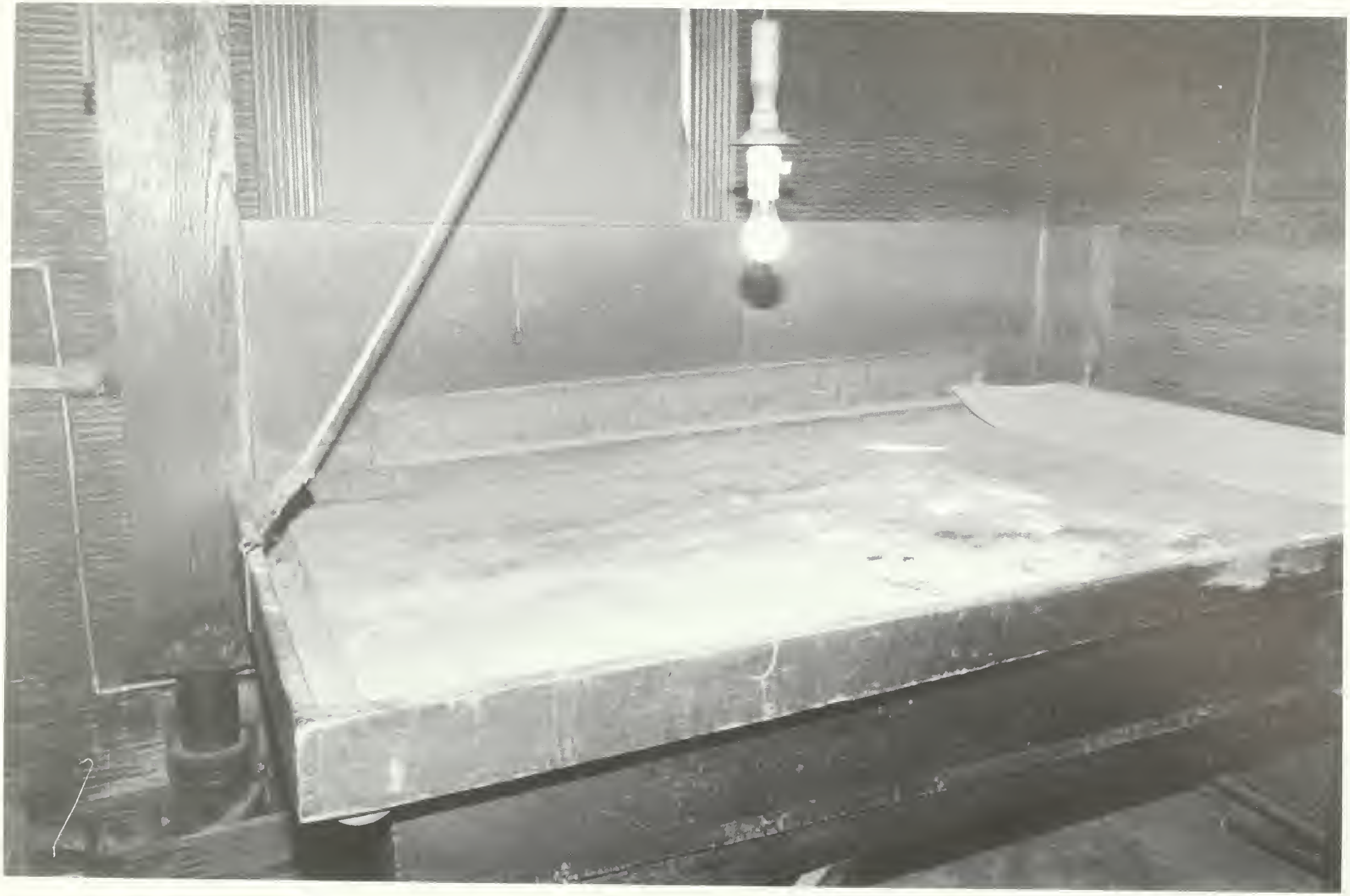

Figure 18. Planting Department: Second story, Developing Room, washing tray for drawings (1986).

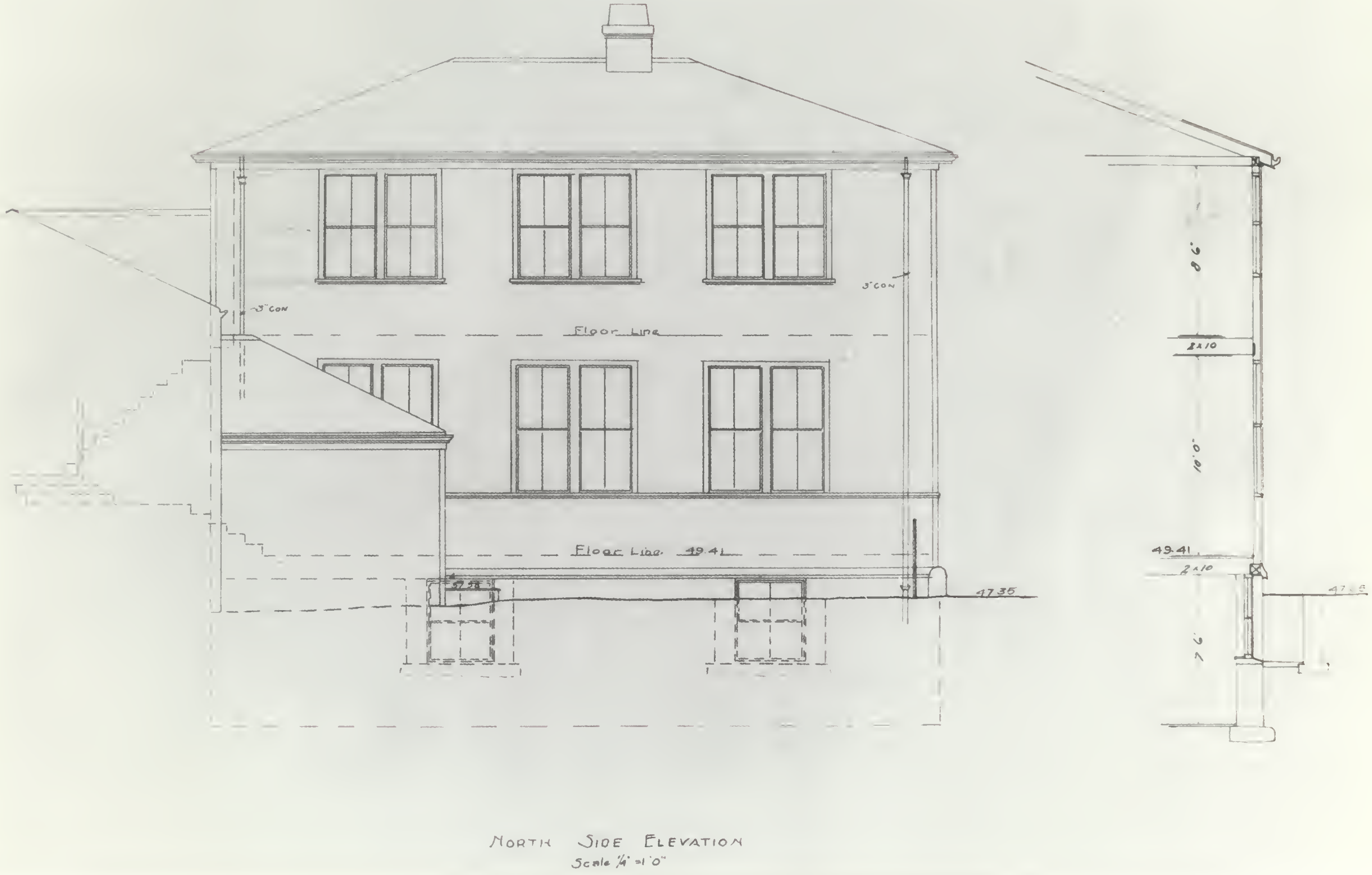

Figure 19. Planting Department: North elevation drawing, circa 1900.

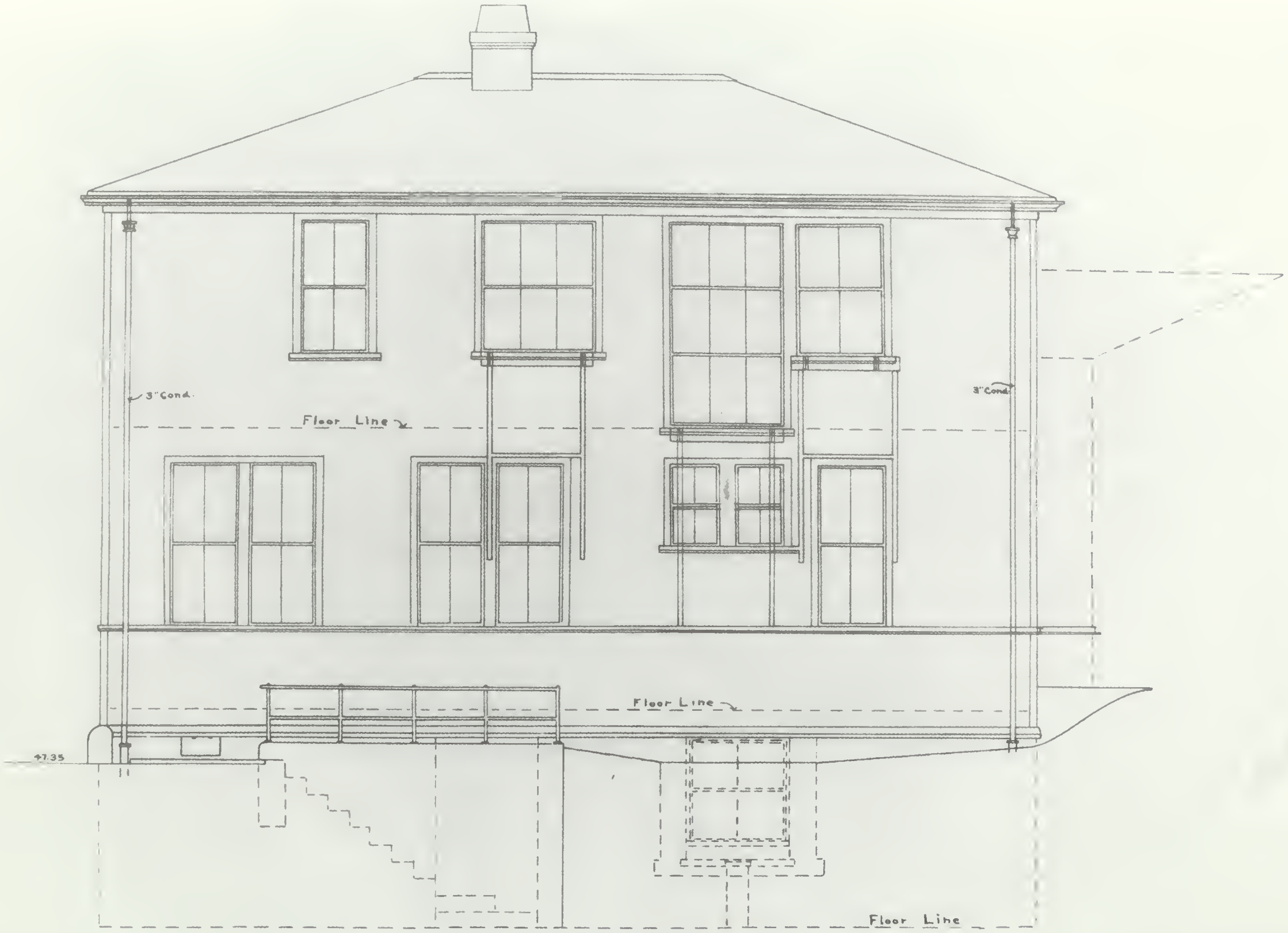

Figure 20. Planting Department: South elevation drawing, circa 1900.

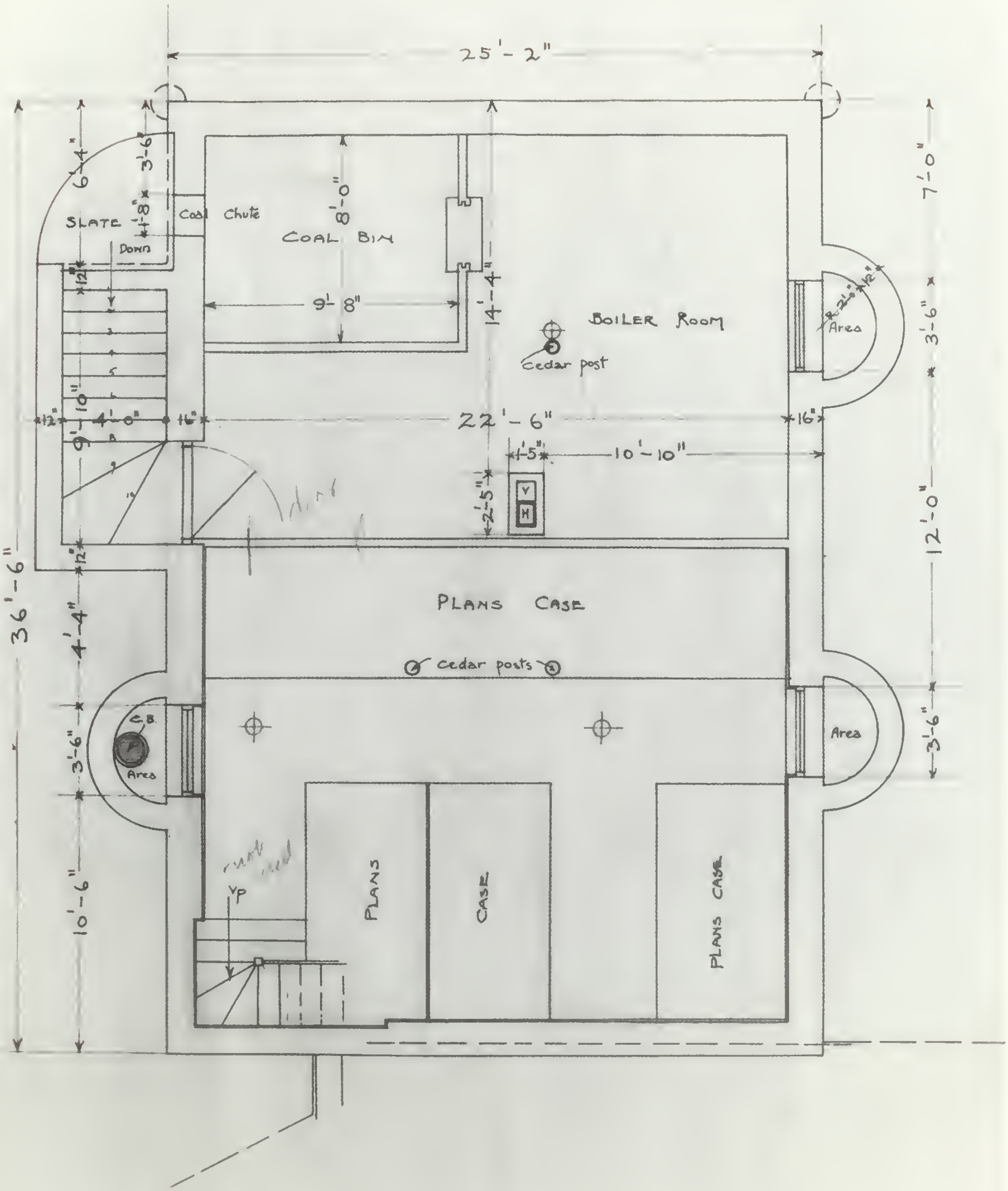

Figure 21. Planting Department: Basement plan, circa 1900.

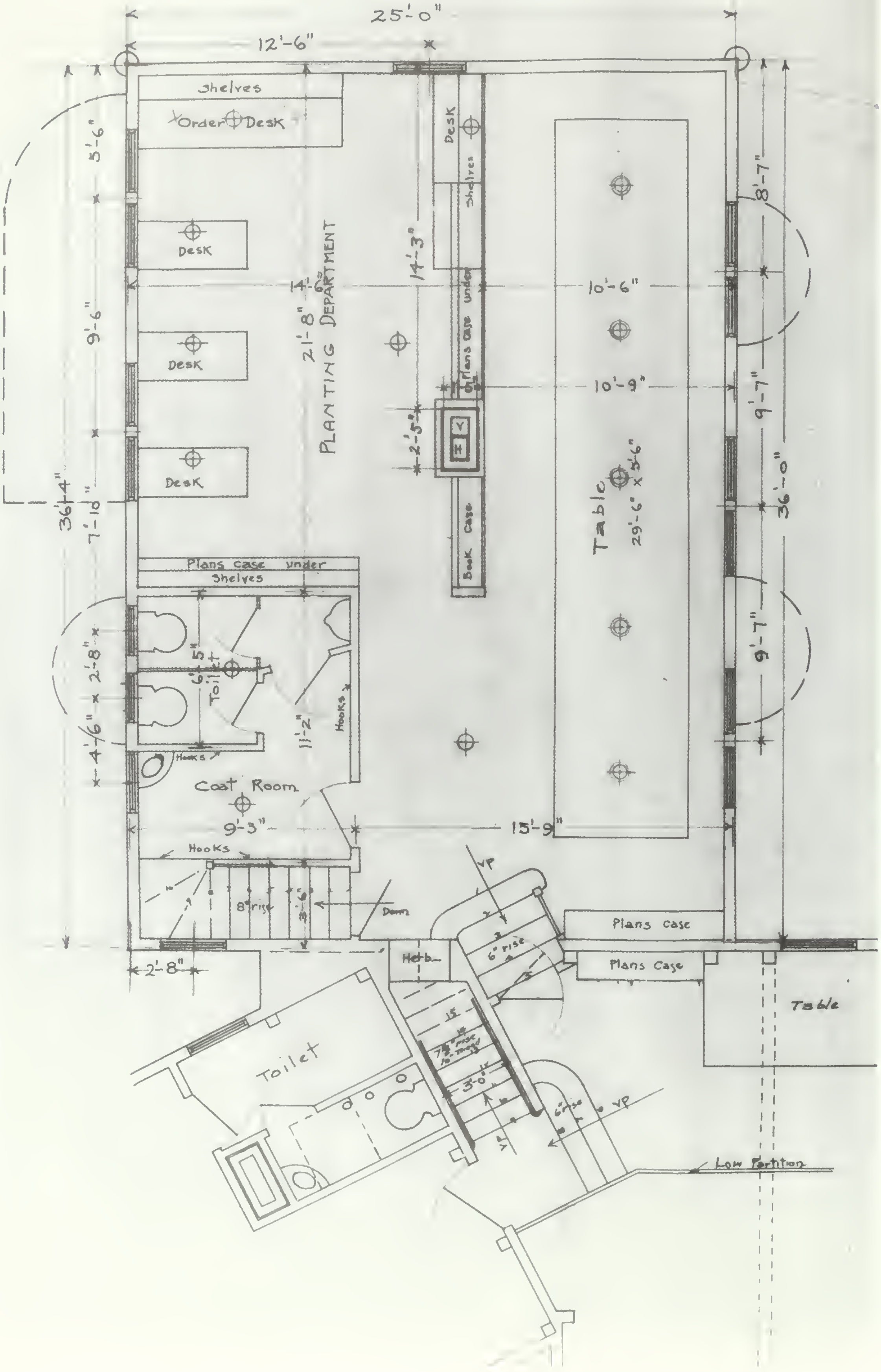

Figure 22. Planting Department: First-floor plan, circa 1900.

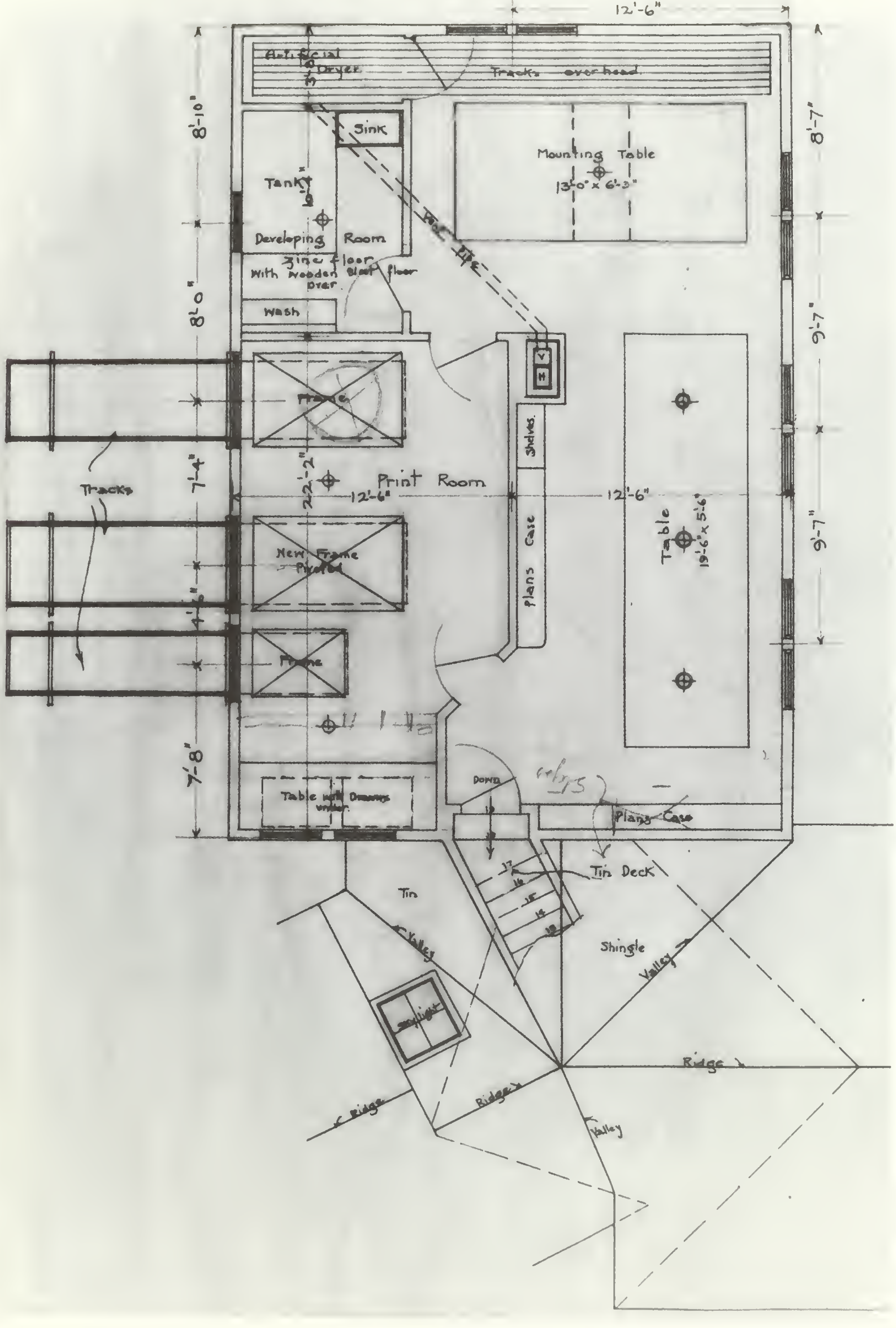

Figure 23. Planting Department: Second-floor plan, circa 1900.

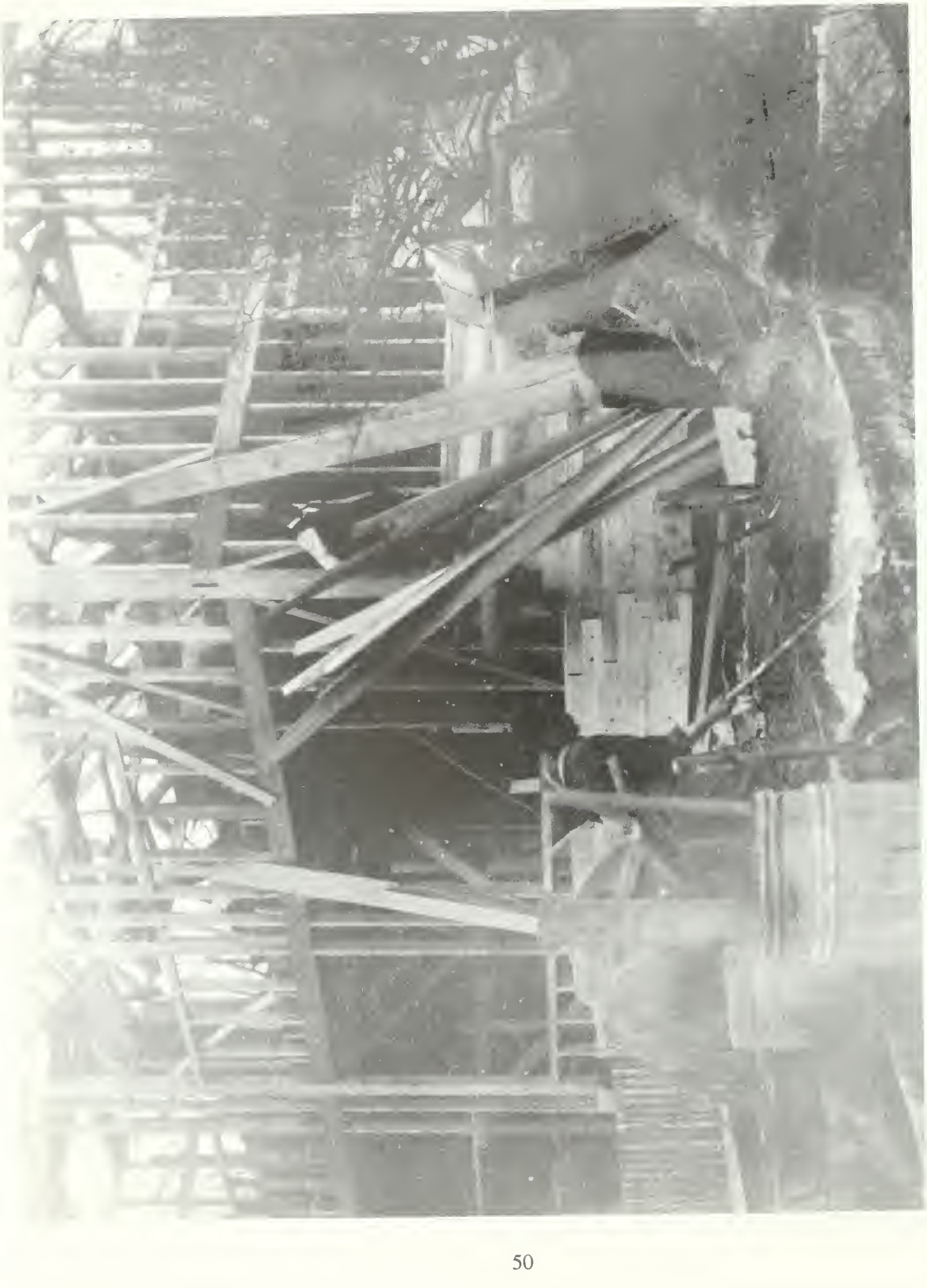

Figure 24. Planting Department: Northwest corner during construction.

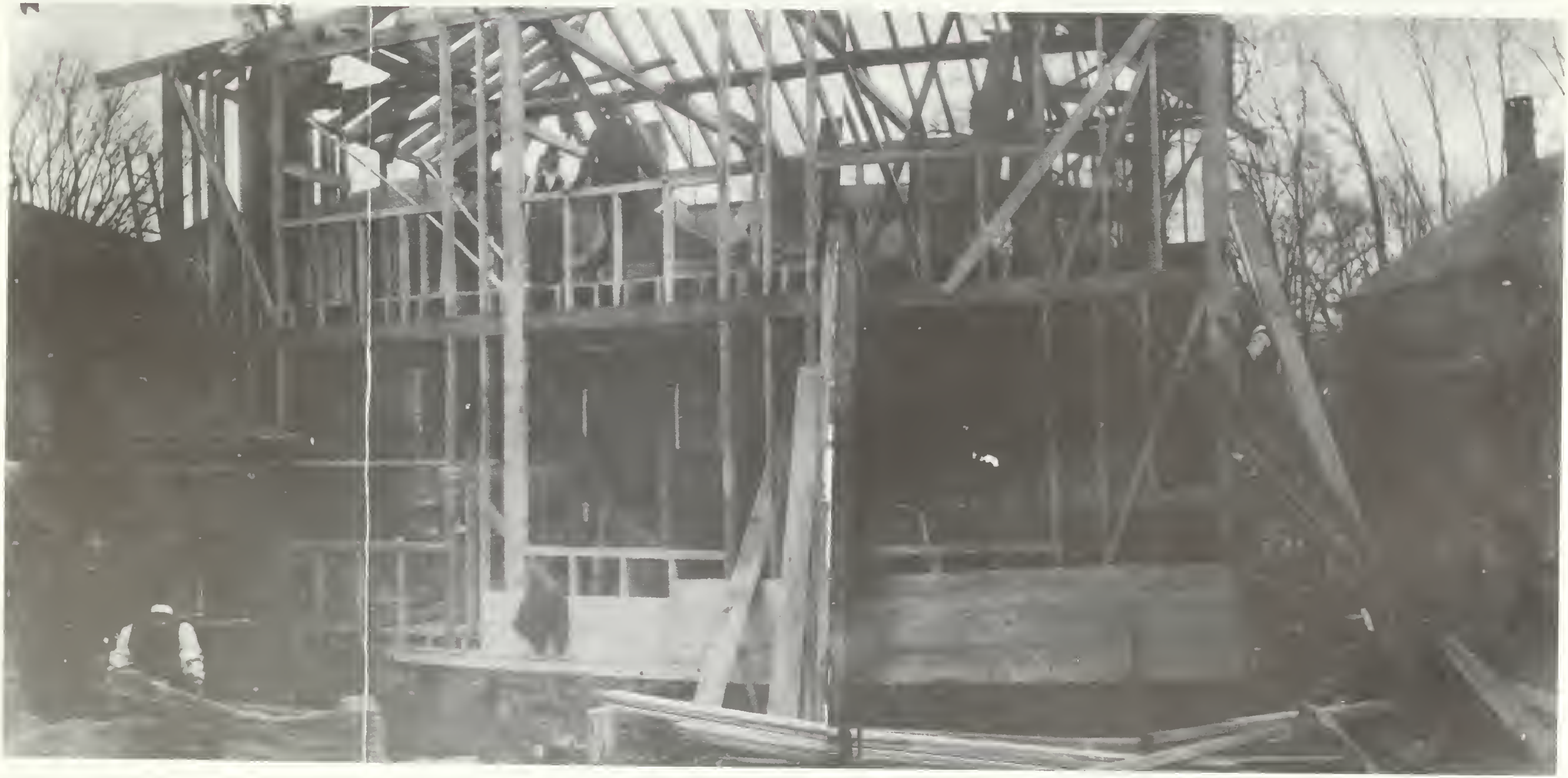

Figure 25. Planting Department: Under construction.

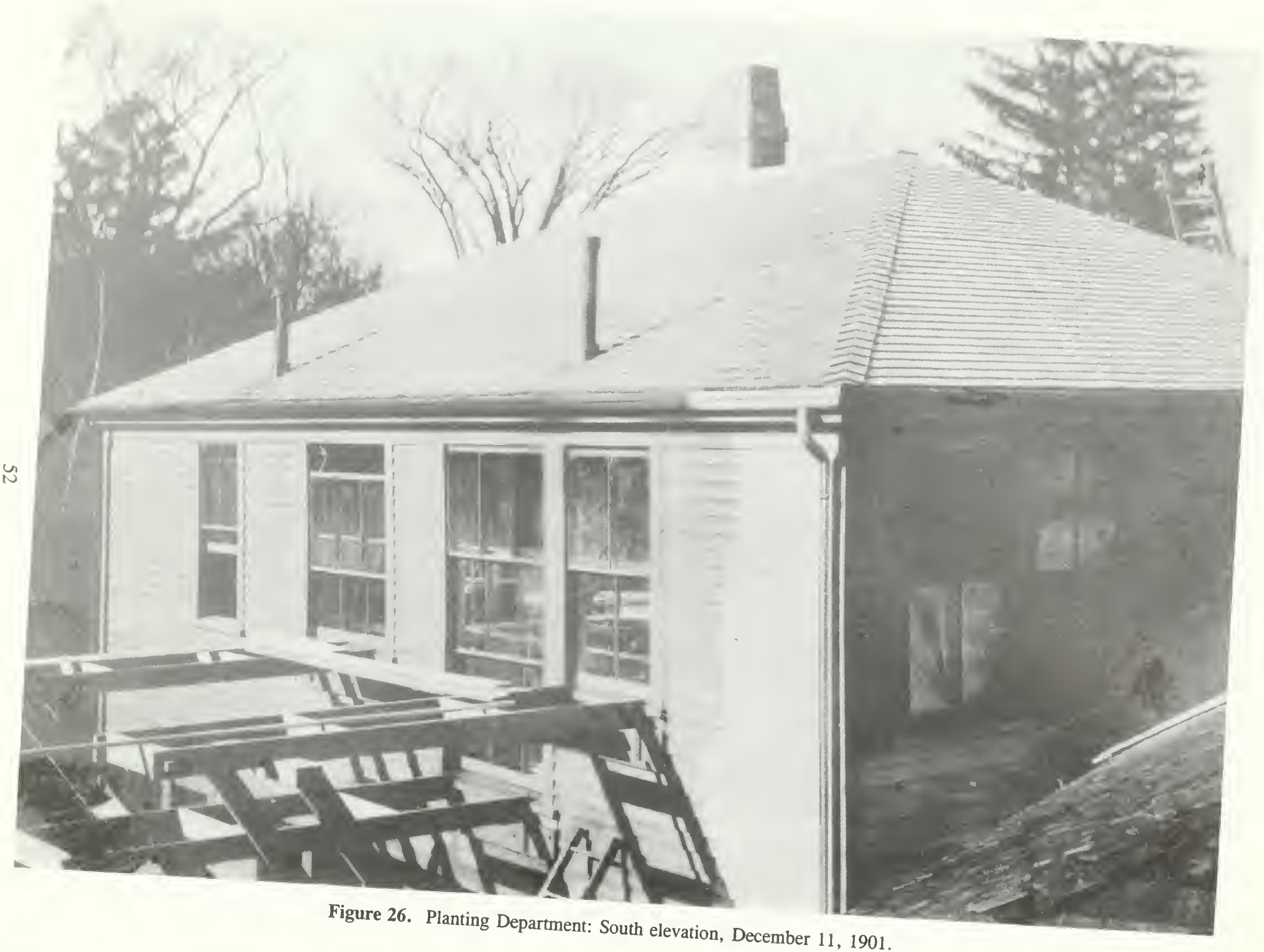

Figure 26. Planting Department: South elevation, December 11, 1901.

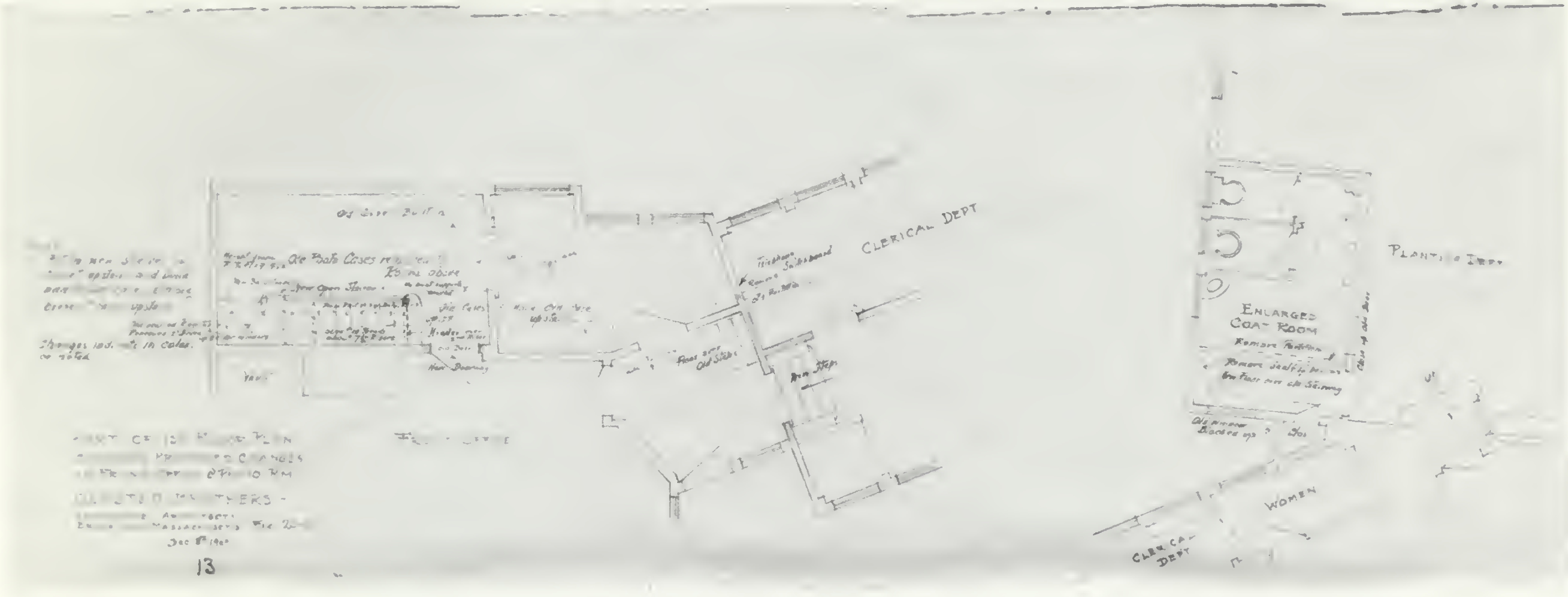

Figure 27. "Part of 1st Floor Plan Showing Proposed Changes in Front Office and Photo Room," which also includes alterations to the Planting Department, December 8, 1909.

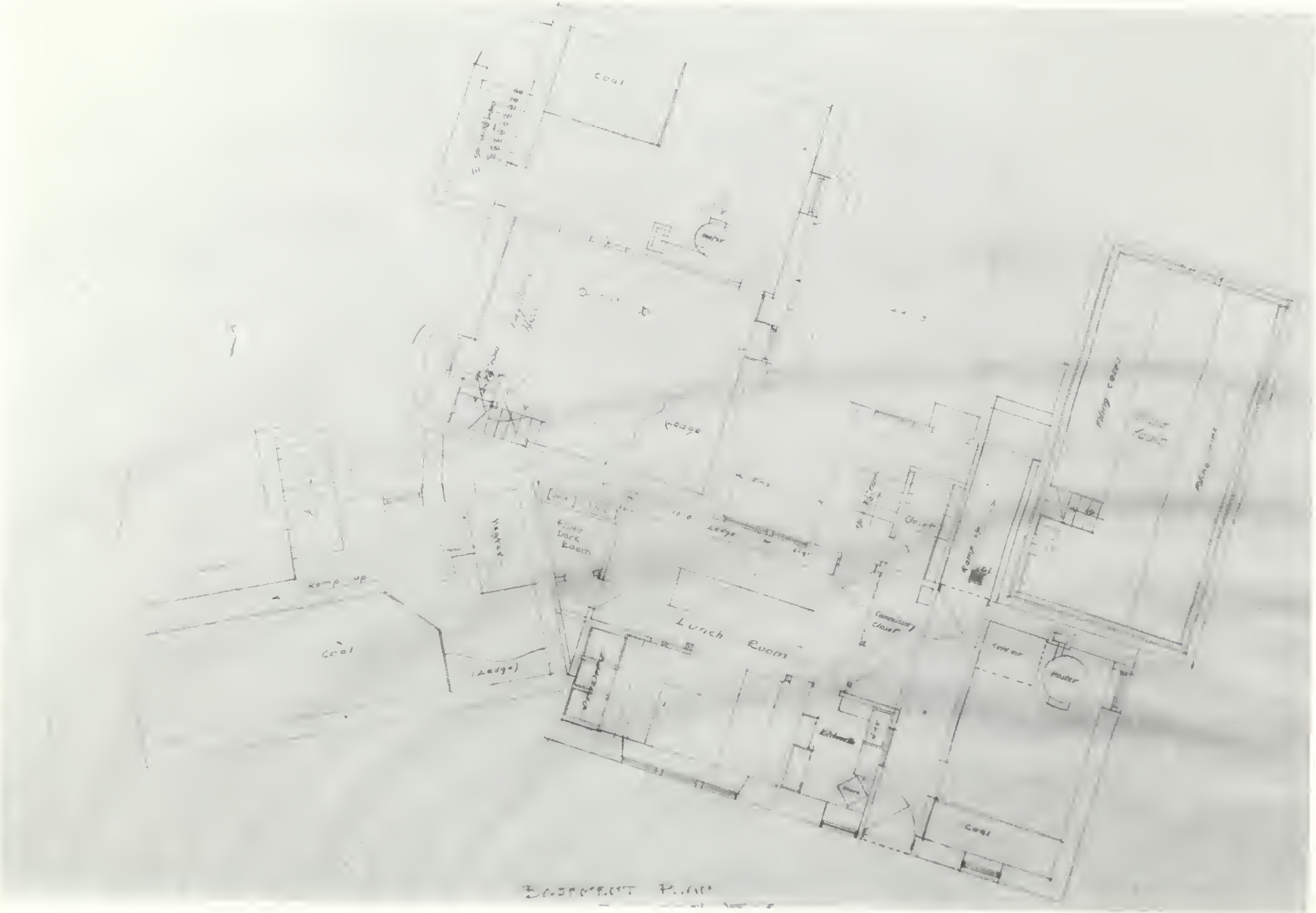

Figure 28. Planting Department: Basement plan for proposed alterations, October 15, 1913.

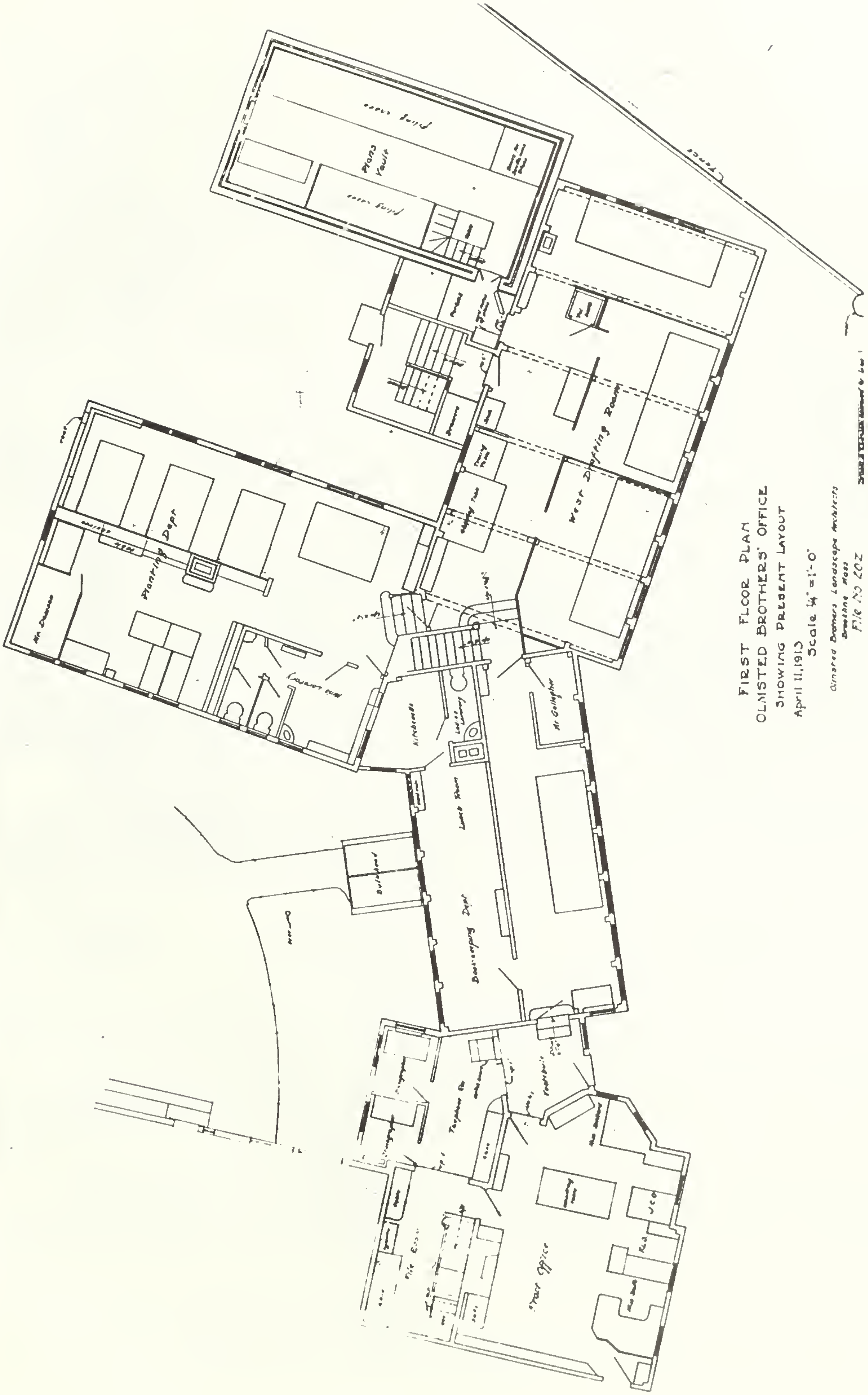

Figure 29. "First Floor Plan, Olmsted Brothers' Office, Showing Present Layout, April 11, 1913."

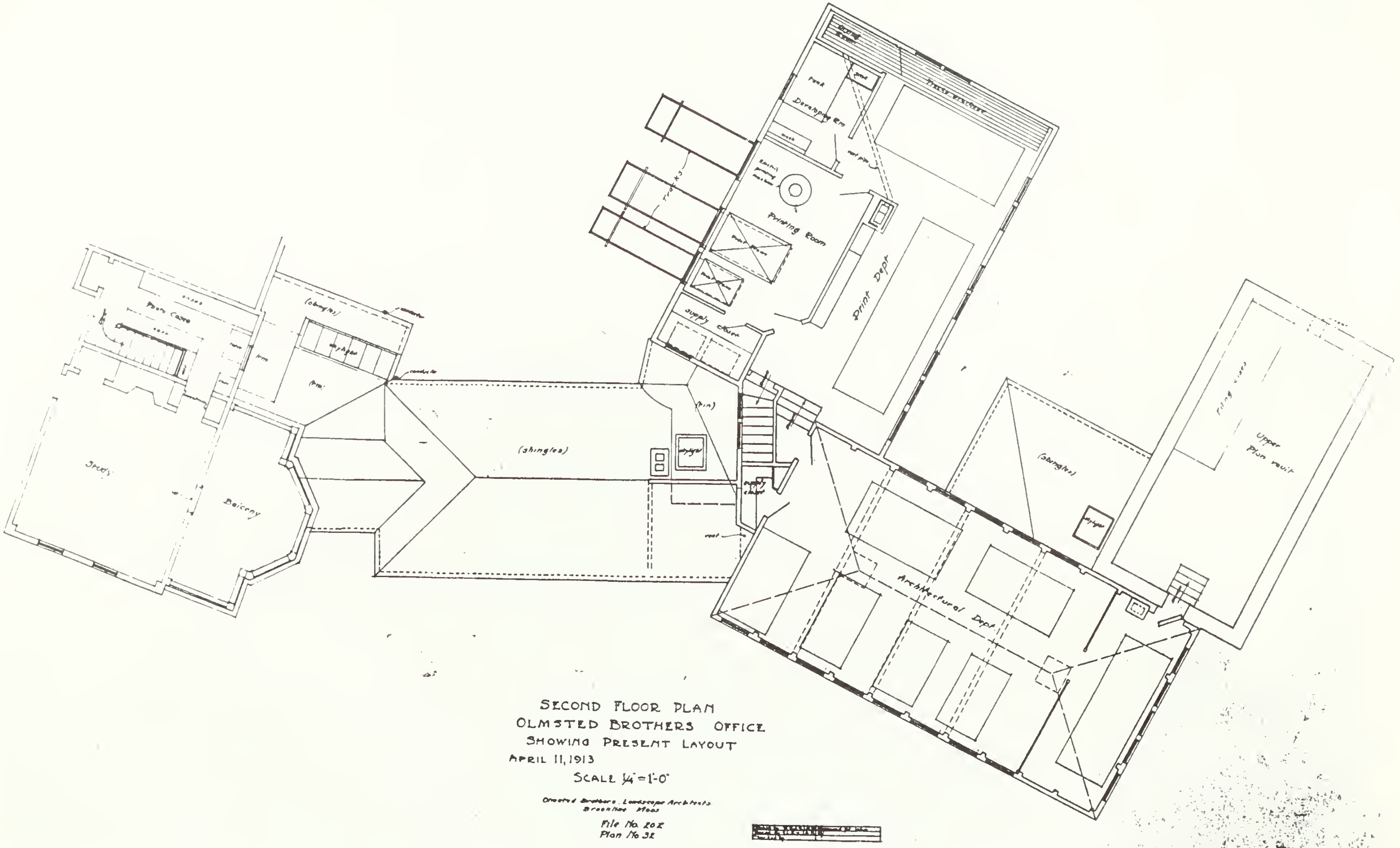

Figure 30. "Second Floor Plan, Olmsted Brothers Office, Showing Present Layout, April 11, 1913."

PLANS VAULT

Introduction

The Plans Vault is a two-story brick structure with a ridge-hipped roof. It is rectangular in shape, measuring 16 feet 6 inches by 31 feet 6 inches. The Plans Vault is the northernmost structure in the office complex. Its east elevation adjoins the west wall of the North Drafting Wing, while its south wall abuts the Rear Entry (fig. 31); its north elevation is parallel to Dudley Street (fig. 32). The interior of the Plans Vault is divided into three levels—the lower vault, the middle vault, and the upper vault.

The Plans Vault, like the Clerical Department and the North Drafting Wing, was built in two stages. The portion containing the lower and middle vaults was built for Olmsted Brothers in 1902 (figs. 33-34). These two vaults were connected by an interior staircase; access was through a Plans File Room located in the Rear Entry. The upper vault (fig. 35) was added in 1912.[8] There was no internal stair between the middle and the upper vaults.

When the property was acquired by the National Park Service, wooden plan boxes 6 inches square and 4 feet long lined the walls of the lower, middle, and upper vaults (fig. 36). The plans boxes contained the drawings for the landscape projects of Frederick Law Olmsted, Sr.; his stepson, John Charles Olmsted; his son, Frederick Law Olmsted, Jr.; and the landscape architects employed by the successor firms of Olmsted Brothers and Olmsted Associates. The drawings included topographical maps, grading plans, planting plans, perspective drawings, utility maps and architectural details. It has been estimated that the Plans Vault contained 115,000 drawings.[9]

The drawings in the Plans Vault were organized according to job. Each new job was given a number, and each drawing and photograph for the job were labeled with that number. Jobs were also given a vault box number, which identified the vault plan box in which its drawings were stored. A typical entry in the Vault Book reads as follows:

Box No.	Job Name	Job Number
1267	U.S. Capitol Grounds	986

This numbering system enabled more than one job to be stored in a plan box.

The number of each plan box was written on its right side. The numbers ran vertically, from the ceiling to the floor. Plan boxes 1-1287 were located in the lower vault, nos. 1288-2273 were in the middle vault, and nos. 2274 and above were in the upper vault.

The National Park Service continued to use the Plans Vault for drawings storage. A multi-year project to upgrade the vault to modern standards of archival storage was begun in 1984 (figs. 37-39). The vault was renovated to be climate-controlled, and to accommodate a flat storage system for the conserved drawings. Drawings and specifications for the work are on file at Frederick Law Olmsted NHS.

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[8] See "Offices: Appendix G, Building Permits."

[9] Appraisal prepared by the Rendells, Inc., 154 Wells Avenue, Newton, MA 02159, May 1, 1979.

Architectural History

Date of Construction

The original, one-story Plans Vault was built in 1902.[10] Ascription of this date of construction is based on the collection of drawings for this portion of the Plans Vault contained in the Olmsted archives, and on entries found in the account book of Frederick Law Olmsted, Jr. More than 60 drawings exist for the first story of the Plans Vault. These drawings, some of which were done by Arthur S. Vinal, include numerous study drawings on trace, final drawings on linen, and several sets of blueprints. The dates on these drawings run from August to November 1901. Pertinent drawings from this collection are reproduced in this report.

Entries in the firm's account book that confirm the 1902 construction date are as follows:

19 December 1901 - Mosler Safe Co. - Fireproof Vault Front - $100.
7 January 1902 - Paid Horace James a/e Plans Vault - $1,000.
15 March 1902 - Horace James - work- Office Vault - To be paid by F.L.O. Sr. - $600.
17 July 1902 - Olmsted Brothers a/e Plans Vault - $2,474.27
F.L.O. Estate - Invested in Plans Vault as of July 17, 1902 - $3,474.27

Evolution of Design

As with the Clerical Department and North Drafting Wing, the wealth of drawings for the 1902 Plans Vault not only document its date of construction, but also provide valuable information about how the design for the structure evolved. As initially conceived, the Plans Vault was to be a small, one-story brick structure roughly 17 feet square (figs. 40-41). It was to have had two interior levels connected by an internal stairway. A plans vault of this design had the advantage that it could be built inside the existing driveway. However, its system of storage—with drawings stored on two levels, and with access to the vault possible only from the first story of the North Drafting Wing—was very vertical and not well-suited to the storage of large drawings. Although not explicitly stated, it seems likely that the decision was made that it would be more efficient over time to move the driveway and build a large one-story vault.

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[10] Although the 1902 Plans Vault contains two floors, its overall exterior height was roughly 15 feet, with 4 feet below ground level. It is therefore most accurately described as a one-story building.

The trace drawings also indicate that storage systems other than the 6-inch-square plan boxes were studied (figs. 42-43). These drawings show that a combination of drawers and plan boxes were considered. The drawers were to be 1 inch deep and located in the center of the original lower and main vaults. A note on figure 43 also indicates that in the lower vault a space was to be provided for oversized drawings: "Same on lower floor, except that bottom row of boxes is omitted and everything cut away for 'Elephants.'"

Description As Originally Built

Figures 44-52 depict the 1902 Plans Vault as it was actually constructed.

Exterior Elements

Foundation

As built, the 1902 Plans Vault was a rectangular brick structure 16 feet 6 inches wide by 31 feet 6 inches long. It was constructed on a concrete slab, which core borings proved to be 2 1/2 feet thick. The concrete was a hard portland cement containing large aggregate. Around the perimeter of the Plans Vault, below the concrete slab, was a 6-inch clay drainpipe. This drainpipe was 4 feet 8 inches below ground level. The lower 4 feet of the exterior brick walls of the Plans Vault were also below ground level. A black damp-proof coating covered these brick walls from the cement slab to a depth of 1 foot 4 inches.

Walls

The exterior walls of the Plans Vault were brick cavity walls 14 inches thick (fig. 44). The outer brick wall was two bricks thick (8 inches) and laid in a Flemish bond. It was separated by a 2-inch air space from the inner brick wall. The inner brick wall was 4 inches thick; it was constructed with single stretchers. Every seventh course was laid with alternating headers and stretchers, tying the wall together. The brick walls of the first story of the Plans Vault were constructed with a natural cement mortar.

The north, south, and west walls had a row of weep holes in the fourth course of brick below the 1902 roof line. These weep holes, which were the size of a header, penetrated the outer brick wall to ventilate the air space within the cavity wall. Because the holes ventilated this air space, they also indirectly ventilated another air space, located above the concrete slab and below the floor of the lower vault. (This air space was vented to the wall cavity through openings in the inner brick wall, directly above the concrete slab.)

The 1902 Plans Vault had one vent in its west elevation. The vent had a tin hood that was quarter-round in shape. It covered a rectangular opening that measured 1 foot by 1 foot 3 inches. The vent hood was flashed with a 6-inch-wide strip of lead. The vent hood and its lead flashing were originally painted dark green.

Doorways and Windows

There were no exterior doorways or windows in the original Plans Vault.

Roof, Chimney, and Gutters

The 1902 Plans Vault had a ridge-hipped roof. Figure 48 shows how the roof intersected the hipped roof of the adjoining North Drafting Wing. Original drawings for the Plans Vault indicate that its roof was framed with 2- by 7-inch rafters, spaced roughly 2 feet on center. The roof was originally covered with wood shingles. At the east end of the roof was a low brick chimney with a tall clay chimney pot. The north, west, and south edges of the roof had wooden gutters that fed into a 3-inch conductor at the northwest corner of the vault.

Interior Elements

Plan

The 1902 Plans Vault was divided into two levels, each approximately 6 feet 6 inches high. The 1901 section drawing (fig. 49) shows this, although it differs from the as-built structure in many respects.[11] The lower vault consisted of a longitudinal center aisle flanked on either side, from floor to ceiling, by plans boxes measuring 6 inches square by 4 feet deep. The only access to this level was a stairway descending from the main vault. The main vault consisted of a longitudinal center gangway, also with 4-foot-deep plan boxes on each side. The only access to this level was a doorway at the west end of the north wall.

This doorway led from the Plans File Room, which was created in 1902 in the northern third of the Rear Entry (see figure 51). This area originally consisted of a closet in its east half and an unused space in its west half. When the 1902 Plans Vault was built, the wall between the two spaces was removed, and the closet's doorway to the Rear Entry was closed up. A new doorway was created in the north wall of the former closet to access the Plans Vault. An original window in the west wall of the North Drafting Wing was converted to a doorway accessing the Plans File Room. For more information about this remodeling, see Volume 2, Part 1, "Rear Entry."

Although not physically within the Plans Vault, the Plans File Room functioned as part of the vault. The doorway connecting the Plans File with the North Drafting Wing featured a half door with a counter. A plans clerk working through this doorway delivered drawings from the vault to members of the firm as requested, and received drawings from them to be filed in the vault. General admittance of firm members to the vault was not allowed. The presence of a Plans File Room in the original drawings for the vault indicates that direct access to the vault was always intended to be limited to the plans clerk.

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[11] The concrete slab does not slope, the floor joists are 3 by 4 inches, the floor of the upper level (main vault) is 6 inches below the "West Drafting Room Floor," rather than 8 inches above. This difference in floor levels eliminates the two steps to the upper level. On one of the blueprints of this section, written in ink is the notation, "Interior Ironwork - i.e. - floors plans cases etc. not to be included in Builder's Contract." This notation helps explain why there are so many discrepancies between the construction drawings and the interior of the Plans Vault as actually constructed.

Floor

The floor framing of the all sections of the lower vault's floor was tarred wood joists measuring 3 by 4 inches and placed 1 foot 4 inches on center. The floor joists were supported on brick piers and shimmed with pieces of slate. The joists were not set into the brick wall. They were situated so that they fell between the weep holes that ventilated the air space between the floor and the concrete slab.

All parts of the lower vault's floor had a subfloor of tongue-and-groove, random-width pine boards three-quarters of an inch thick. Only the center aisle had finish floorboards, which were three-quarters of an inch thick and 2 1/2 inches wide. Both the subflooring and the finish flooring were installed after the steel columns supporting the main-vault floor above were seated on the concrete slab.

The main vault consisted of a longitudinal center gangway, also with 4-foot-deep plan boxes on each side. The gangway was supported on iron posts 1 1/2 inches in diameter, placed about 5 feet 9 inches on center. The posts had a base 5 inches in diameter that rested directly on the concrete slab. They supported steel angles measuring 2 by 2 inches by one-eighth of an inch, which carried the 2-inch-thick gangway subflooring. Nailed to the subflooring was a finish floor of oak boards 2 inches wide. The plans boxes were built on top of, and were supported by, the plans boxes on the lower level.

Walls and Ceilings

The walls of the both the lower and main vaults were finished with "Compo-Board," a thin wallboard consisting of a layer of brown paper, wood lath, gypsum, and another layer of brown paper. The "Compo-Board" was nailed with cut nails to 1-inch-thick wood furring strips, which were nailed to the brick walls.

The ceiling of the lower vault consisted of the underside of the floor of the main vault. The ceiling of the main vault was covered with a one-coat rough white plaster. Above this plaster was the structural ceiling of the 1902 vault. This ceiling, like its vertical brick walls, was designed to be fireproof. It consisted of 8-inch steel I-beams, with 4-inch flanges, placed 3 feet 2 1/2 inches on center. The I-beams were embedded into the walls to a depth of about 12 inches. They were reinforced with steel tie rods running down the center of the room (figs. 52-53). The area between the I-beams was filled with 8-inch hollow terra-cotta tiles laid in a flat arch. The spaces between the tiles were filled with concrete. Above the tile was a layer of cinder concrete fill 2 1/2 inches thick. The framing for the 1902 Plans Vault roof, described above, was built on top of this fireproof ceiling structure.

Doorways

The door in the doorway between the Plans Vault Room and the 1902 portion of the vault was a metal fireproof door unit made by the Mosler Safe Company. This door was purchased on December 19, 1901, for $100, according to the account book of Frederick Law Olmsted, Jr. The doorway frame spanned the 14-inch-thick brick wall. The outer side of the doorway had a door that measured 2 feet 6 1/2 inches by 6 feet 6 inches; it was half an inch thick, and had a combination lock. The inner side of the doorway had hinged half doors.

The door in the doorway between the Plans File Room and the North Drafting Room has already been described in the previous section "Plan."

Interior Stairway

The 1902 main and lower vaults were connected by an interior stairway in the southeast corner, near the entrance. The exact design of this stairway is unknown. All physical evidence for how it ran was destroyed or covered when the present stairway was built in 1910. Various trace drawings for the stairway, including one for a spiral stairway, indicate that its design was problematic. Figures 49 and 50 show the most likely design. This was a narrow rectangular stairway that ascended north to south, with winders at the top that turned the stairway 180 degrees to meet a landing just inside the fireproof doorway from the Plans File Room.

Furnishings

Existing drawings shed little light on the original furnishings for the Plans Vault, other than the plan boxes that lined the walls. The sliding plans table still extant in the lower vault appears to have been part of the original construction (figs. 54-55). This is based upon the fact that the table was in place prior to the extension of the office fire-alarm system into the vault in 1903. An account-book entry dated October 10, 1903, pinpoints the date of the alarm work in the vault. (See the subsequent section, "Utility Systems, Fire-Alarm System.") Some of the wiring for this system had to be run underneath the pre-existing track for the sliding plans table. The crudely cut nature of the holes for the alarm wire under the track also indicates that they were cut after the track was installed. It is not known if there was any other furniture in the 1902 Plans Vault.

Utility Systems

Electrical System

The 1902 Plans Vault had electric lights. The design of the original light fixtures here cannot be positively documented. However, the fixtures that hung in the Plans Vault prior to its being gutted in 1983 may have dated to 1902. They consisted of a white porcelain back plate from which a cloth-covered wire extended 3 inches. At the end of this wire was a socket. These lights had wire bulb guards. The vault wiring was run on the surface and covered with molded wooden strips.

Heating System

The 1902 Plans Vault had electric heat as well as electric lights. A small blueprint for the design of a Plans Vault electric heater is on file in the Olmsted archives. The drawing is labeled "104 V Special Radiator 3600 Watts, the Simplex Electrical Co., Cambridgeport, Mass., 3-22-02." It is not known if this design for the electric heater was used, because on May 21, 1902, the following entry appears in the Olmsted Brothers account book:

Clark T. Mills	Heater in Vaults	wiring for lights, etc. $157.50

Fire-Alarm System

An October 10, 1903, entry in the account book of Frederick Law Olmsted, Jr., reads as follows: "Boston Automatic Fire Alarm Co. $43.79." Since the main alarm system for the office had been installed in 1901, this additional charge was undoubtedly for wiring the Plans Vault into the system.

Additions/Alterations

Changes in 1910

Alterations to Plans File Room

Several of the 1901 drawings for the construction of the Plans Vault have later changes penciled on them; these include the drawing from which figures 50 and 51 were taken, which also has the date "1910" written in pencil. These notations primarily reflect the addition of built-in pieces of furniture to the Plans File Room. They depict furniture that is similar to, or the same as, what is now in the room (fig. 56). This furniture consists of a desk along the west wall, shelves and a card catalog along the south wall, and a row of triangular shelves in the northeast corner of the room. The desk along the west wall is of unconventional construction. It is built on a 6-inch-high platform. The top of the desk is 5 feet square and supported by drawers that measure 2 feet 7 inches deep by 2 feet 5 1/2 inches high by 1 foot 3 inches wide. The size of the drawers left a space under the desk for a radiator (installed in 1912) and the sprinkler-system pipes (dating to 1914). It also allowed air from the west-wall window to pass into this room.

Alterations to the Plans Vault

The major change within the Plans Vault itself was the rebuilding of the original interior stairway between the 1902 lower and main vaults. As stated previously, the design of this stairway was problematic from the beginning. The stairway that was finally built probably resembled the design seen in figures 50-51. However, it was proved to be less than satisfactory. In 1910 the stairway was replaced with a larger, L-shaped stairway with 10 steps (see figures 51 and 57). The treads were 11 inches wide; the risers were 7 1/2 inches high. Three winders at about the middle of the stairway turned the right angle of the "L."

Evidence for the 1910 date includes a first-floor plan dating to 1911 (figure 94 in "North Drafting Wing"), which labels the stairway as "new". Physical evidence further supports this date. Cut nails were used to secure the "Compo-Board" used in the 1902 construction. However, the "Compo-Board" covering the walls of the present stairway is secured with wire nails; these are similar to those used for the "Compo-Board" in the upper vault, built in 1912. Also, the stairway itself is constructed with wire nails.

The rebuilding of the stairway required the removal of six rows of plans boxes from the lower vault. In the main vault, within the rectangular area formed by the new stairway, a plans table was built (fig. 58). This plans table remained in its original location until 1983. Other furniture proposed for the main vault are seen in figure 51, the 1901 floor plan with 1910 annotations in pencil. These changes included a shelf along the east wall of the vault, immediately inside the doorway. There is no evidence of nail holes or shelf brackets on the "Compo-Board" on this wall to indicate that this shelf was ever built.

Another 1910 alteration appears to have been the installation of the present "Compo-Board" ceiling in the main vault, which covers the original rough plaster ceiling. This is based upon the fact that it is secured with wire nails like those used with the "Compo-Board" in the present stairway.

Changes in 1912

Addition of a Second Story

The Plans Vault consisted of only a lower and a main level (fig. 59) until 1912, when a second story was added. The building permit for this work, issued September 13, 1912, describes the proposed alterations as follows: "Raise present roof 12′, built up brick walls to frame with brick and iron roof under wood roof."[12]

In contrast to the original, 1902 portion of the Plans Vault, few drawings exist for the 1912 addition. The drawings for the second-story addition to the North Drafting Wing, built in 1911, show the outline of the second story of the Plans Vault. (See figures 82-83 in Volume II, Part 1.) In addition, one blueprint (Plan #20-4) dated December 4, 1909, shows a second-story addition to the Plans Vault that was to be used for the storage of photographs, rather than drawings. Most notable in this set of drawings is the large skylight that was to be built into the roof.

The lack of detailed drawings for this addition is understandable, since the existing roof was merely raised and new brick walls built beneath it, using the same type of construction used for the 1902 Plans Vault. Furthermore, there were no doorway or window openings in the new exterior walls.

In the absence of detailed documentary drawings, information about the 1912 addition to the Plans Vault has been gleaned primarily from extant physical evidence and several construction photographs. The addition of a second story to the Plans Vault was accomplished in a similar manner to the second-story addition to the North Drafting Wing. The roof of the one-story 1902 Plans Vault was detached and raised one story. Figure 60, a photograph of the Plans Vault during construction, indicates that the roof was raised with a block-and-tackle system and then supported by temporary wooden underpinning while the brick walls were built.

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[12] The method of fireproof construction for the ceiling of the 1902 Plans Vault is nearly identical to the system described and illustrated by the National Fire Proofing Company in the Sweet's Catalogue for 1918. The method of construction was confirmed with a 4-inch core drilling.

The brick walls of the second story of the Plans Vault were brick cavity walls 14 inches thick and 12 feet high. They bore directly upon the exterior walls of the first story. The outer two wythes of brick were laid in Flemish bond. In the fifth course of brick below the roof line were a row of weep holes. These weep holes ventilated only the air space within the second-story wall. The concrete poured around the 8-inch I-beams in the ceiling of the 1902 portion of the Plans Vault prevented the air space from being continuous between the first and second stories. The only other opening in the exterior walls of the second story of the Plans Vault was a vent in the west elevation.

The ceiling of the second story of the Plans Vault was constructed similarly to the ceiling of the first story, to also be fireproof. It consisted of 8-inch I-beams placed 3 feet 2 1/2 inches on center. The area between the beams was filled with 6-inch terra-cotta tile, laid with a rise of seven-sixteenths of an inch. The exposed surface of the tile was ribbed; the joints between the individual tiles were filled with concrete. Above the terra-cotta tiles was a 4-inch layer of concrete.[13] Once this ceiling was constructed, the circa-1902 roof was lowered into place.

After the 1902 roof was in place, it was modified to meet the roof of the North Drafting Wing (by now two stories high). The south hip of the Plans Vault roof was extended to meet the west hip of the North Drafting Wing roof, forming a valley at their juncture. The north hip of the North Drafting Wing roof was extended to the east hip of the Plans Vault roof, forming another hip at their juncture. These extensions jointed the two roofs with two simple flashed valleys.

A triangular vent was inserted at some point at either end of the roof ridge. These vents may have been added when the second story of the Plans Vault was built, or they may have been part of the installation of the present slate roof in 1927.

The upper vault was not accessible from either the 1902 portion of the vault or the Plans File Room. Access to the upper vault was possible only through a doorway from the second story of the North Drafting Wing (see figure 61). The door in this doorway was made by Sargent & Greenleaf of Rochester, New York. The metal door frame spans the 14-inch-thick brick wall, and contains an outer and an inner door. The outer door measures 2 feet 6 inches by 6 feet 8 inches and is five-eighths of an inch thick. It has a combination lock. The inner door measures 2 feet 4 inches by 6 feet 6 inches, and is five-eights of an inch thick.

The floor of the upper vault was 3 feet 2 1/2 inches below the threshold of the vault doorway. It was reached by three steps that descended from a landing located just inside the doorway. The floor was concrete, a 4-inch slab poured directly onto the 2 1/2-inch cinder concrete that formed the top of the 1902 Plans Vault ceiling. Running east/west down the center of this floor was a 7-inch pipe chase for the supply and return lines for the radiator located at the west end of the upper vault. This chase was created with simple wood formwork when the concrete finish floor was poured. Its construction indicated that a hot-water radiator was installed in the upper vault when it was built. The pipe chase was covered with a strip of wood.

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[13] The structure of this ceiling was determined by drilling a hole 2 inches in diameter through it.

The walls and ceiling of the upper vault were finished with "Compo-Board" secured with wire nails to 1-inch furring strips.

The installation of plans boxes in the upper vault appears to have been done over time, rather than at the time of its construction. The 1913 floor plan for the upper vault (fig. 61) shows plan boxes only along about two-thirds of the south wall. It shows no plan boxes, nor the present-day balcony, along the north wall.

Electric lights were installed in the upper vault when it was built. There were three lights originally, placed equidistant down the center of the vault. The light fixtures consisted of white porcelain bases, into which the sockets were set. The bulbs were covered with fluted, white, opaque glass shades. All wiring in the upper vault was run on the surface and covered with molded wooden strips.

As stated above, the upper vault was heated by a hot-water radiator. It appears that the electric heater in the lower and main vaults were also replaced with hot-water radiators circa 1912. The decision to replace the electric heaters so soon after their installation may have been based on the operating costs of this form of heat. On January 24, 1903, the following entry appears in the Olmsted Brothers account book: "Brookline Gas Light Co. Electric Heating - Plans Vault $652.56." The amount of time covered by this bill is unknown; however, since the bill for the purchase of the heaters was only paid on May 21, 1902, the bill for the electricity couldn't have spanned a very long time.

The fire-alarm system installed in 1903 in the lower and main vaults was not extended into the upper vault. The reason for this decision is unknown. The system had been extended into the second story of the North Drafting Wing when the latter was built only one year earlier. It may be that the firm considered the upper vault sufficiently fireproof not to need the system.

Changes in 1913-1983

Exterior Elements

Few significant alterations were made to the exterior of the structure after 1912. In 1927, the wood shingles were replaced with gray-green slates. As stated previously, the vents inserted at either end of the roof ridge may have been added at this time. The 1982 roof contract included extensive replacement in kind of the flashing in the valleys at the east end of the vault.

Interior Elements

Several alterations were made in the main (now middle) vault. Fifteen rows of plan boxes were removed from the southwest corner. A new floor was laid here, and wooden file cabinets were installed. In the northeast corner, 10 rows of plans boxes were removed. Large sliding drawers that were the size of four plans boxes were built in this area to store drawings for projects in progress. These drawers are shown on the 1913 first-floor plan for the offices (fig. 61), and are seen in a 1984 photograph (fig. 62).

The upper vault was eventually filled with floor-to-ceiling plans boxes along the south wall, except in the southeast corner, where there were two floor-to-ceiling shelves. A balcony was built at a height of 5 feet 6 inches along the north wall. The balcony was a simple wood-frame structure built to hold filing cabinets. A fourth electric light fixture was added in the northeast corner of the upper vault when the balcony was built. The area under the balcony was filled with rows of plans boxes. There are neither drawings nor written documentation to confirm when these storage units were added to the upper vault. Physical evidence such as nail types and finishes provide no clues, either. It is assumed that units were added as needed, most likely during the period when the firm grew most rapidly (1912-1930).

Plans Vault Renovations

When the National Park Service acquired the Frederick Law Olmsted National Historic Site, it was mandated that the archival collection remain at the site. The firm's drawings, estimated to number approximately 110,000, were to be conserved and preserved for use by researchers.[14]

Preservation of the drawings required that their storage conditions be improved. The Plans Vault was unheated at the time of acquisition by the NPS. Drawings were tightly wound around wooden dowels and stored in wooden boxes 6 inches square by 4 feet long. Many of the drawings had become brittle over time, and further damage was done each time they were unrolled. In addition, some of the drawings had been damaged when the lower vault flooded in 1954.

Due to its fireproof construction and because the significance of the site's landscape precluded any new construction, the only possible storage space for the drawings was the Plans Vault. Therefore, a feasibility study was prepared in 1982 by Crissman & Solomon Architects, Inc., to recommend how the Plans Vault could be renovated for suitable drawings storage.

Copies of the feasibility study are on file at the Frederick Law Olmsted NHS. Its conclusions and recommendations are summarized as follows:

- Flat storage is the only suitable way to store valuable archival material. Therefore, all of the existing storage units in the Plans Vault (the 6-inch-square wooden boxes) should be removed and a shelving system for flat storage installed. The Plans Vault storage system, however, is one of the most dramatic interpretative features of the site. Therefore, a portion of this system should be installed on the middle level of the Plans Vault and stocked with nonhistoric drawings.

- The new storage system would require the complete demolition of the interior space of the Plans Vault. Existing entrances into the Plans Vault should be preserved.

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[14] By 1998, this estimate had been increased to 150,000.

- The space in which the historic drawings would be stored should be strictly climate controlled. New HVAC equipment for the Plans Vault would be installed at the north end of the North Drafting Wing basement. A halon fire-suppression system should also be added.

- It is not known if all of the drawings presently stored in the Plans Vault would fit back into the vault after the construction of a flat storage system. Another unknown is the size of the drawings that are presently stored in rolled condition. In an effort to maximize the use of the space within the vault, compactor units should be used for the first and second levels. Two drawer sizes, 62 inches by 42 inches and 43 inches by 32 inches, are recommended for the shelving units, while rolled storage is recommended for the storing of some of the oversized drawings.

From the feasibility study, drawings and specifications for the renovation of the Plans Vault were prepared by Crissman & Solomon Architects, Inc. The project was divided into two phases—the demolition and reconstruction of the interior space of the Plans Vault, and the installation of the shelving system. Arrangements were made with the Springfield Armory National Historic Site to store the drawings there until the renovations were completed.

The first phase of the renovations of the Plans Vault was completed in 1984-1985. The work was done by Fellsway, Inc., of Medford, Massachusetts (contract no. CX1600-5-0003). The drawings and specifications for this work are on file at the Frederick Law Olmsted NHS. The work included: the complete demolition of the interior space, the erection of steel interior framing, the pouring of concrete floors, the plastering of all wall and ceiling surfaces, and the installation of heating, air conditioning, and ventilating equipment. Figure 37 is a photograph of this work in progress. Figures 38 and 39 show the present condition of the interior of the Plans Vault.

In 1987 the shelving for the middle level of the Plans Vault was manufactured and installed. The shelving for the other levels was not purchased at the same time, because the cost of the sophisticated aluminum storage system being used precluded it. As the conservation of the drawings progresses, additional storage units will be purchased. Drawings and specifications for the storage units are on file at the Frederick Law Olmsted NHS.

Editor's note: the project to equip the Plans Vault with shelving was completed in 1995.

After the storage system on the middle level was installed, the examples of the historic shelving system were installed at the east end of this level. The Plans Vault was then again available as an interpretative resource for the site.

Existing Conditions/Recommendations

The project to renovate the Plans Vault has put that structure in good condition. When the exterior brickwork needs repointing, the proper mortar mixture can be devised by taking mortar samples and matching the sands.

FIGURES FOR THE PLANS VAULT

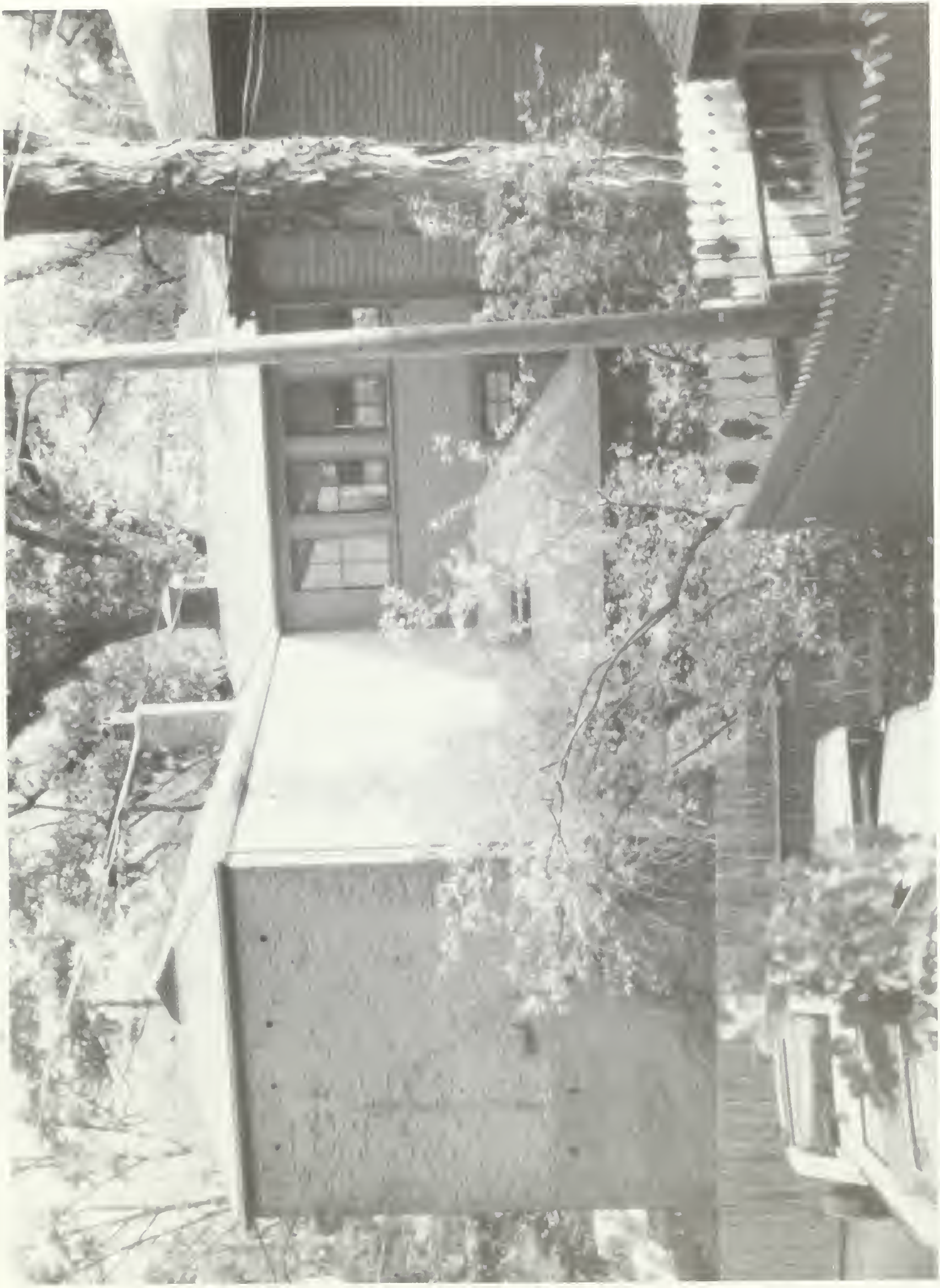


Figure 31. Plans Vault: West and south elevations (1989).

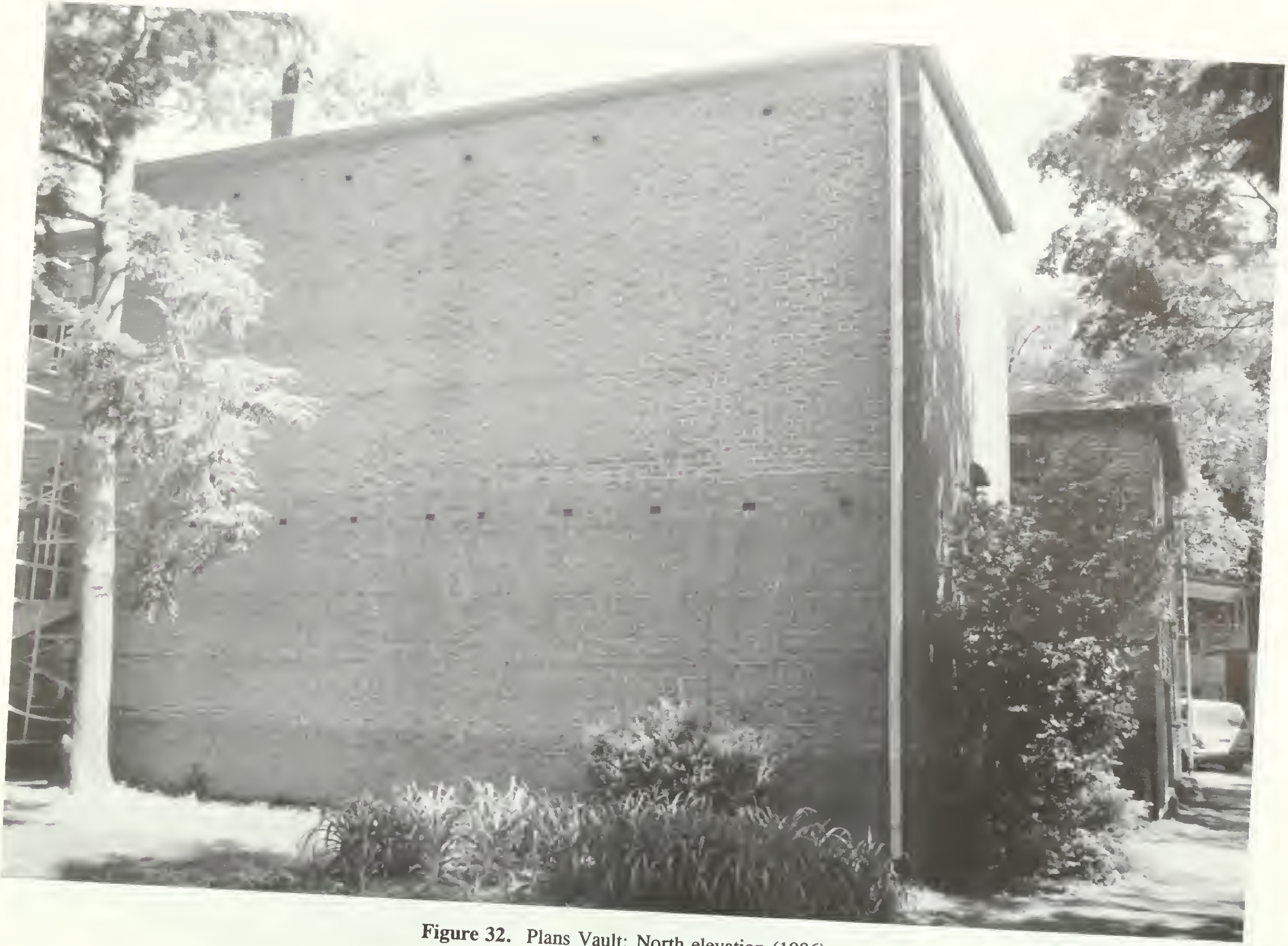


Figure 32. Plans Vault: North elevation (1986).

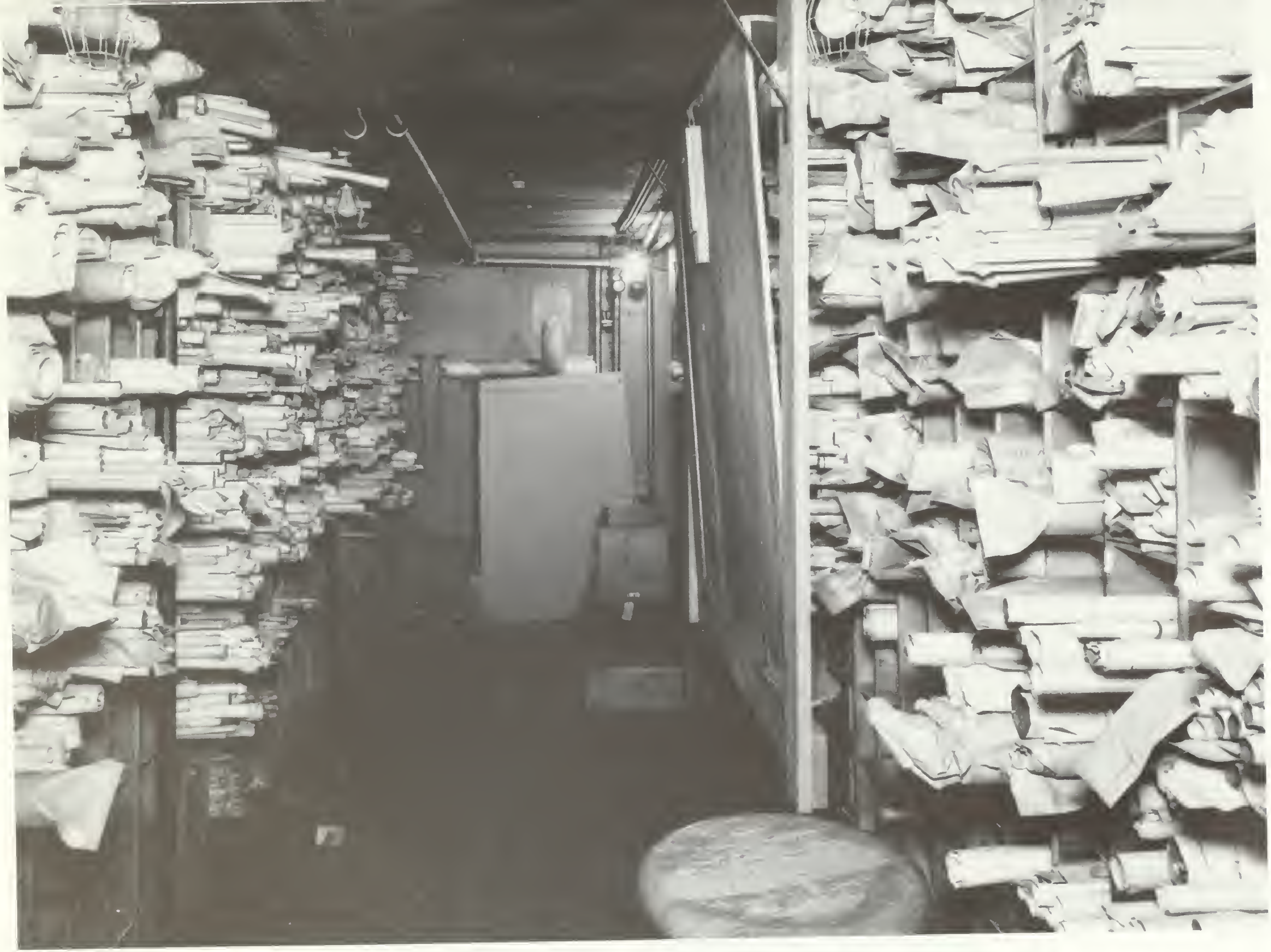


Figure 33. Plans Vault: Interior of lower vault, facing east (1980).

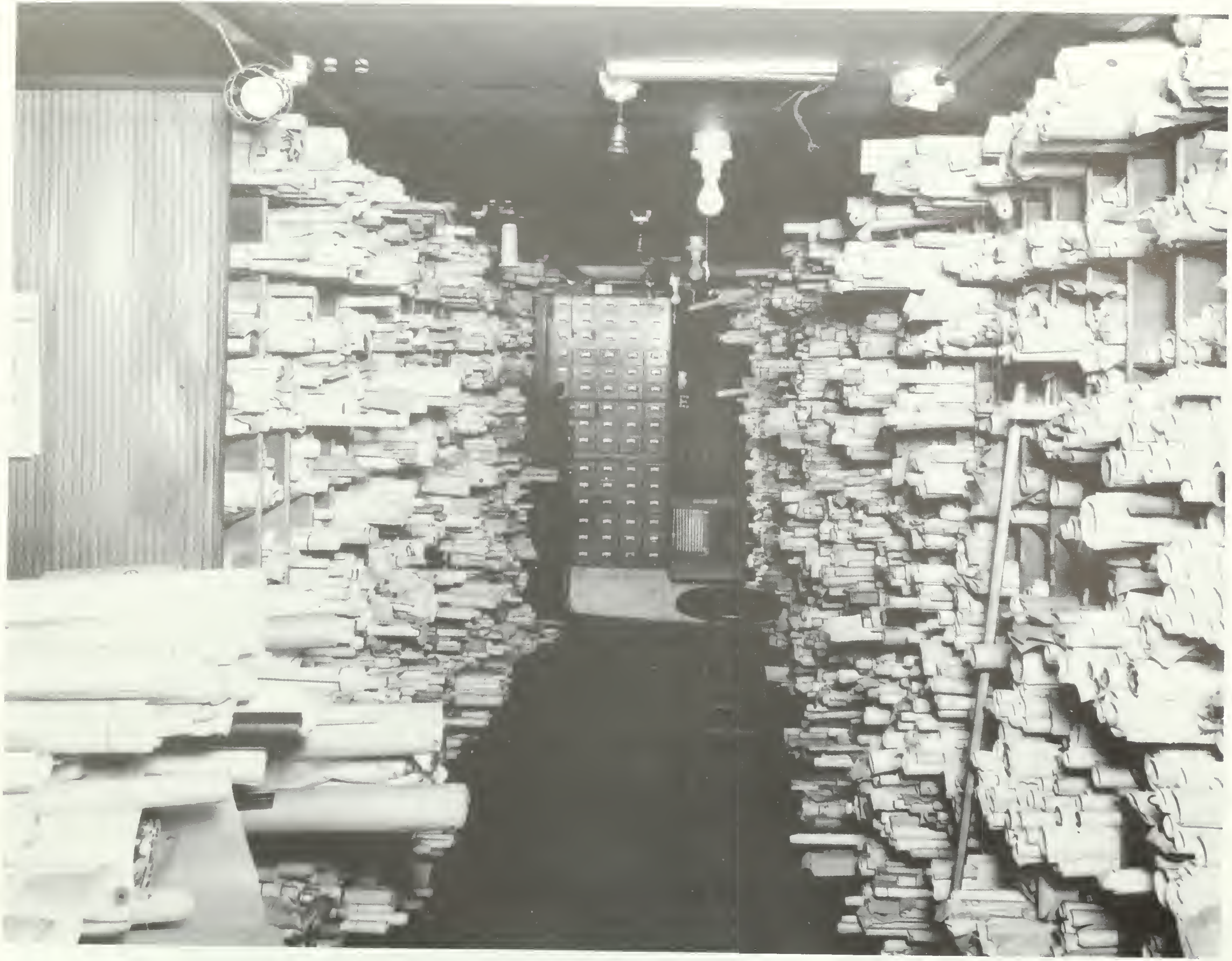


Figure 34. Plans Vault: Interior of middle vault, facing west (1980).

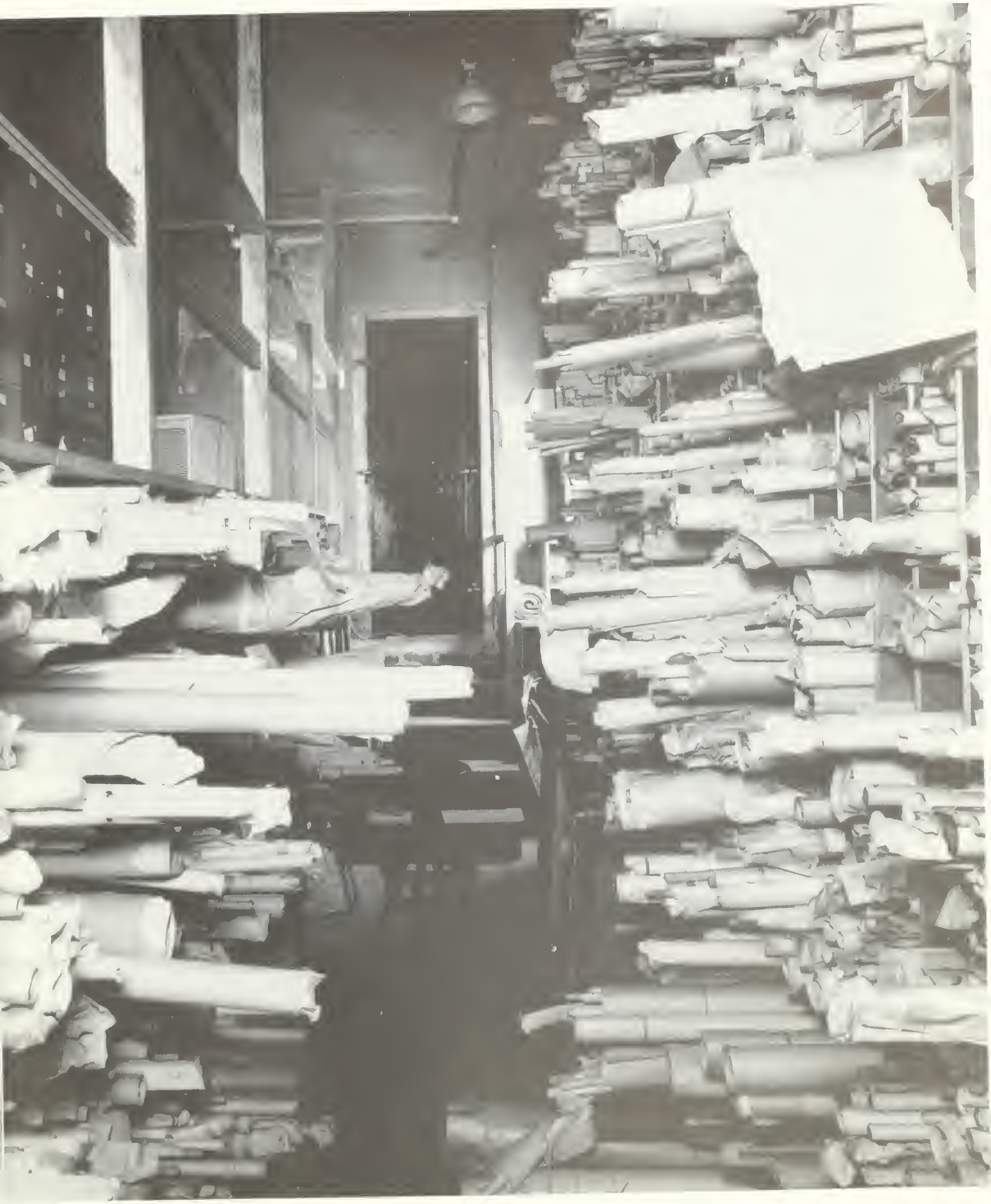


Figure 35. Plans Vault: Interior of upper vault, facing east (1980).

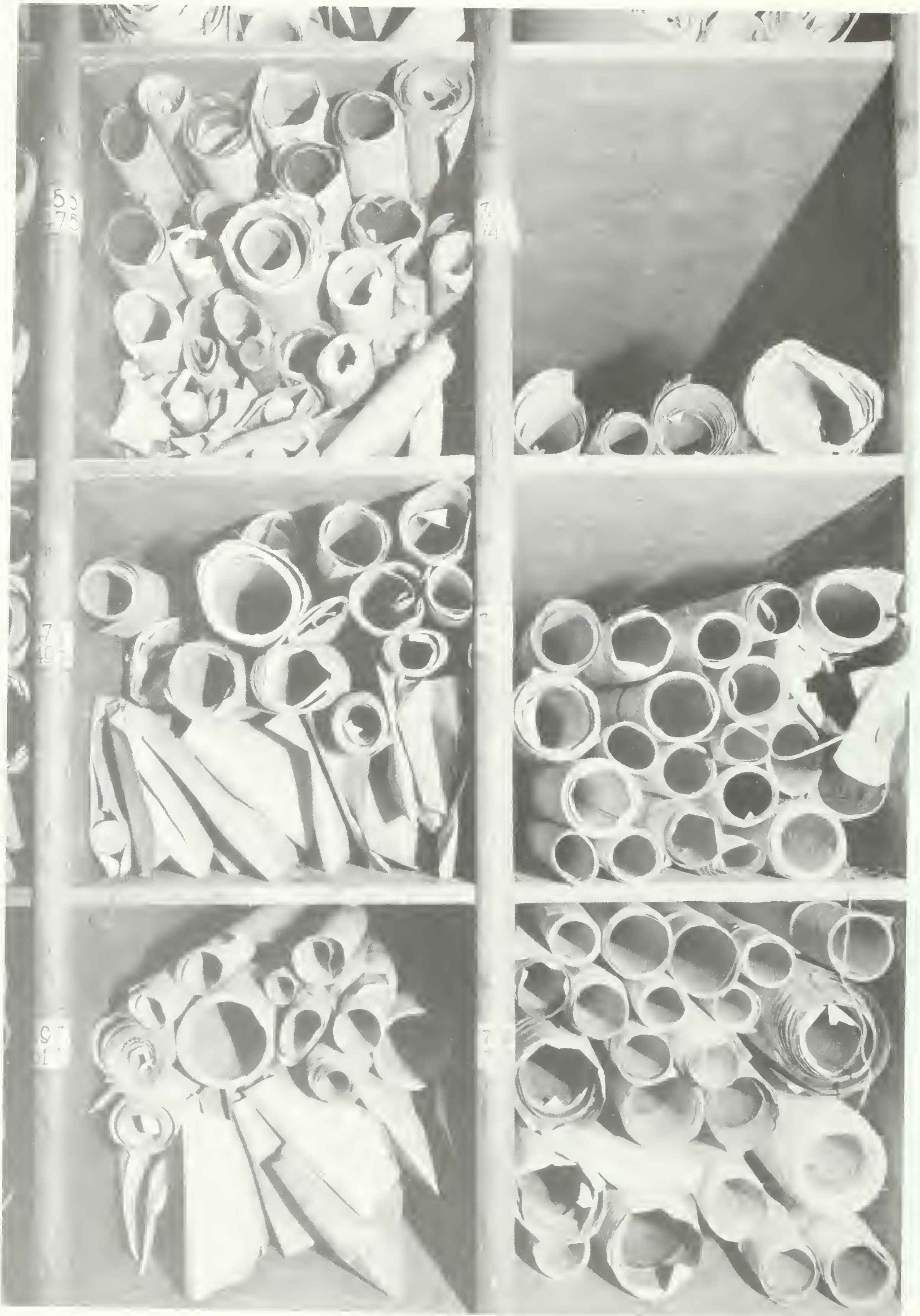


Figure 36. Plans Vault: Plans boxes (1980).

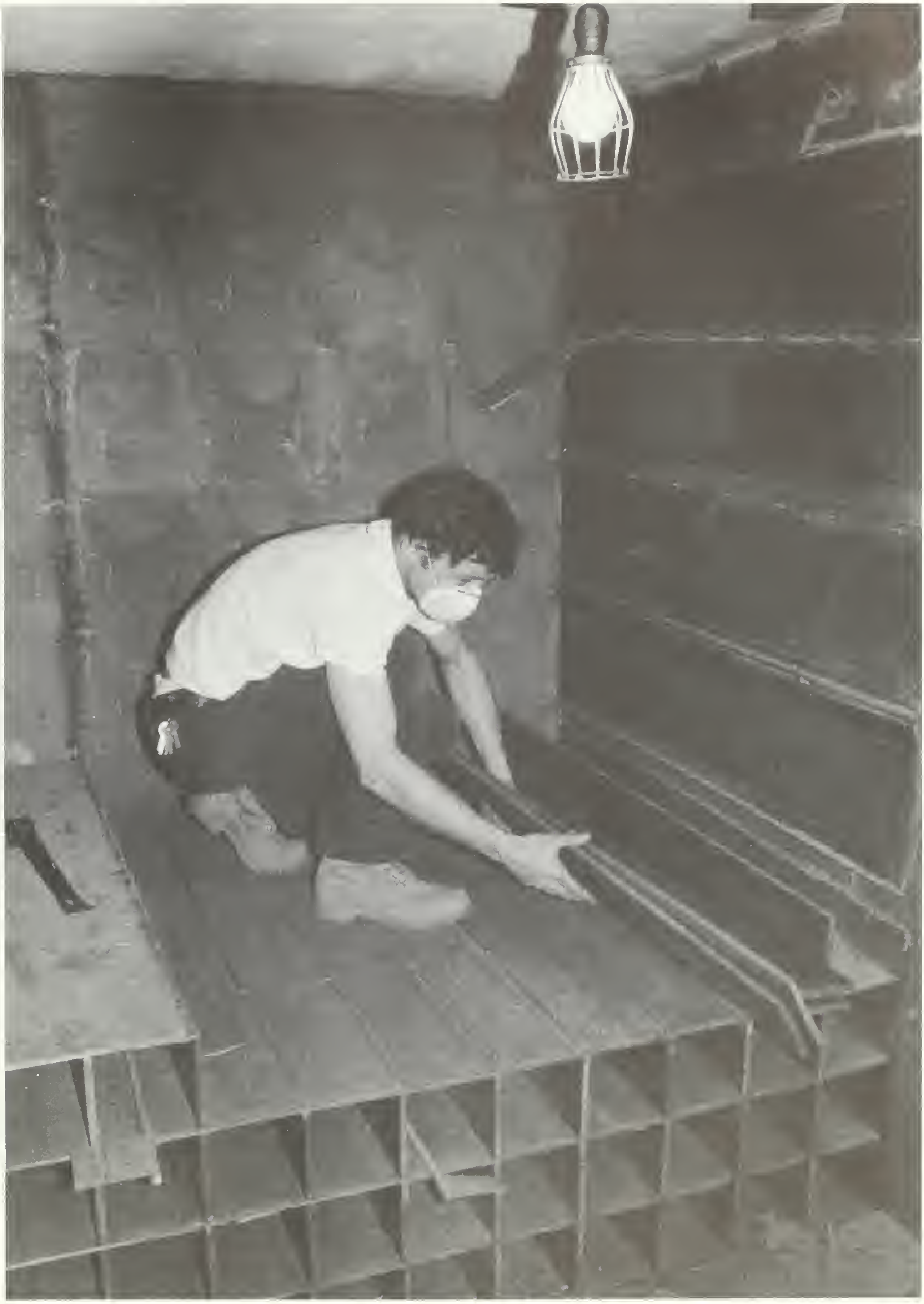


Figure 37. Plans Vault: 1984 renovations in progress.

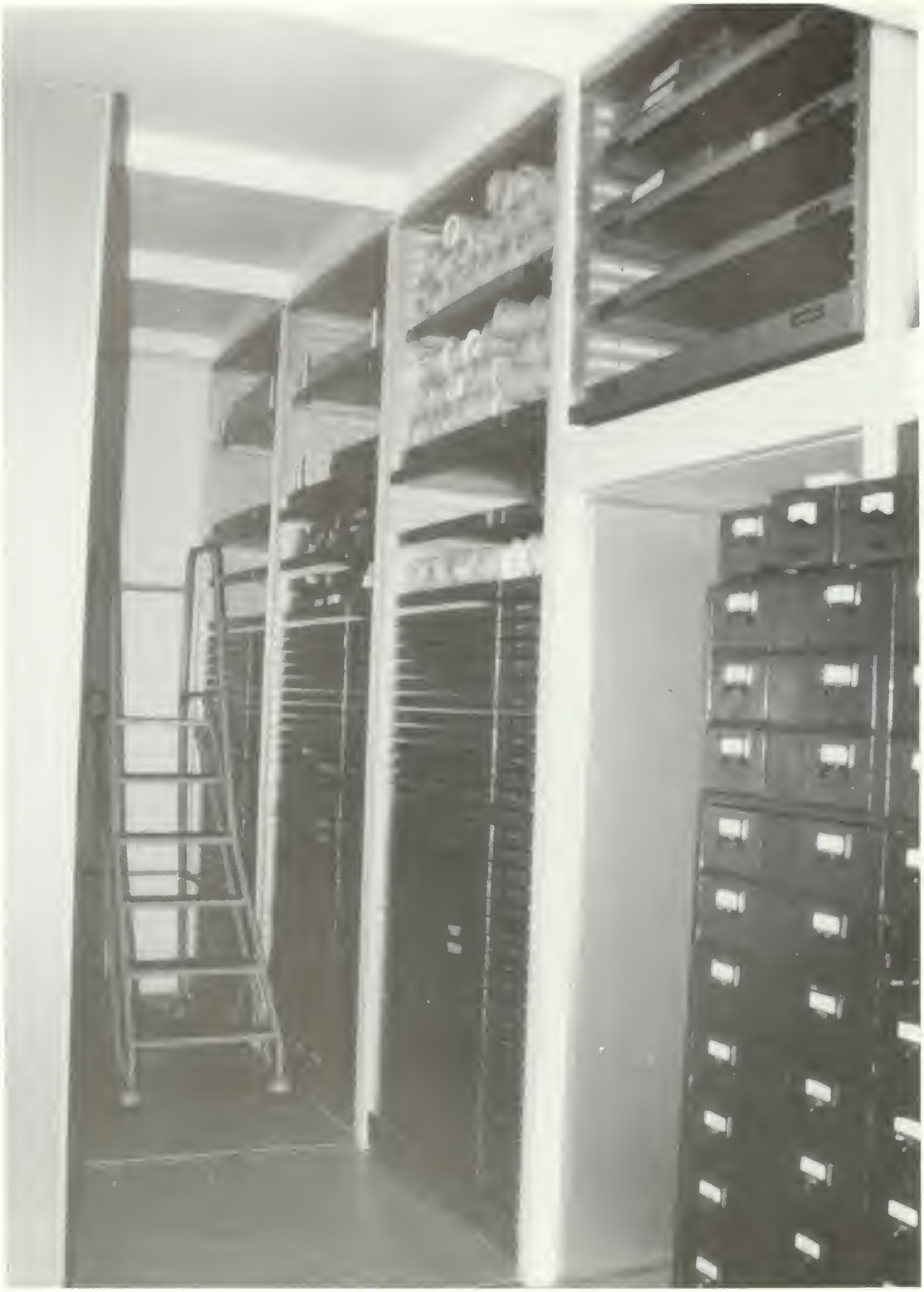


Figure 38. Plans Vault: Middle vault, north side (1989).

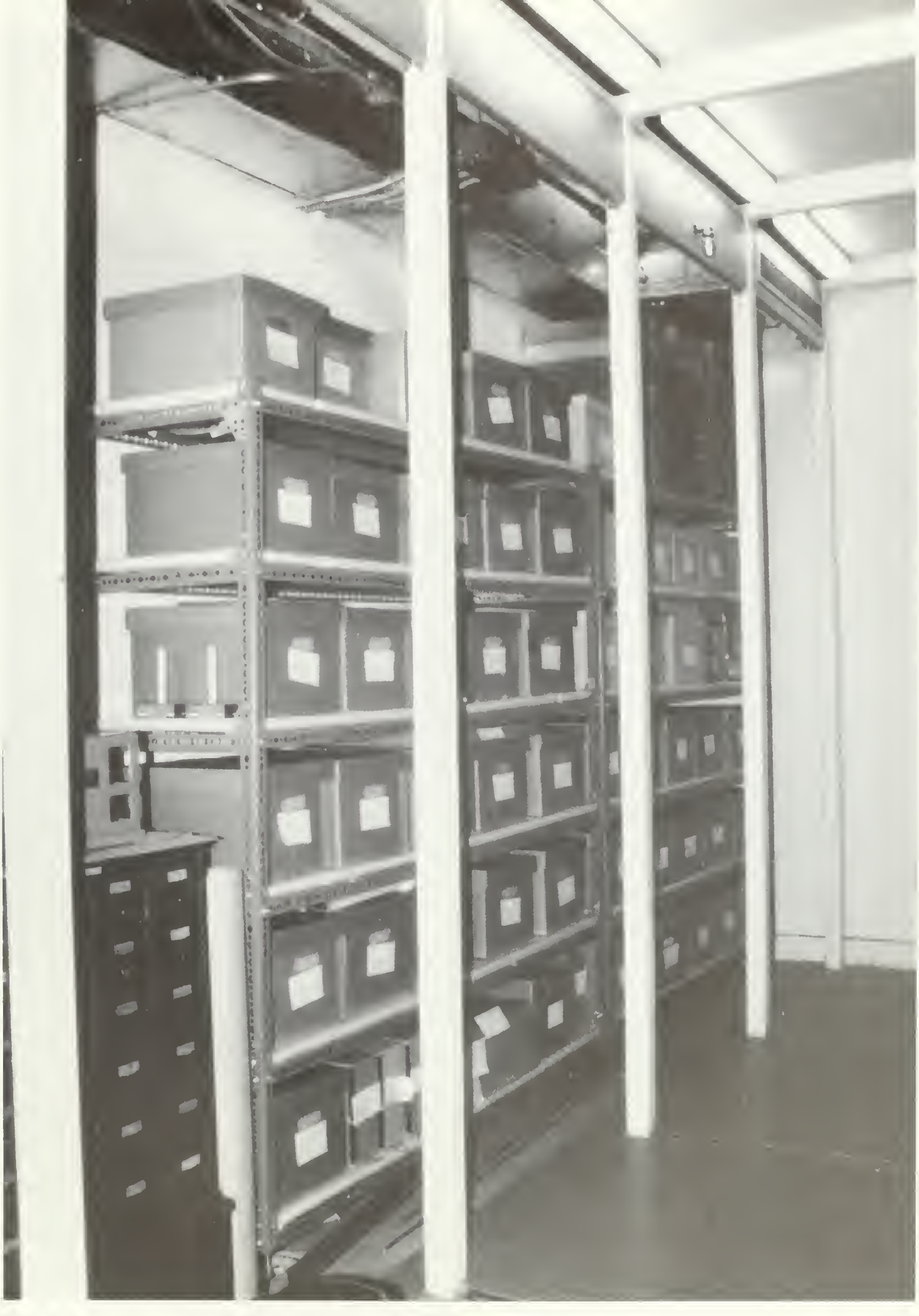


Figure 39. Plans Vault: Middle vault, south side (1989).

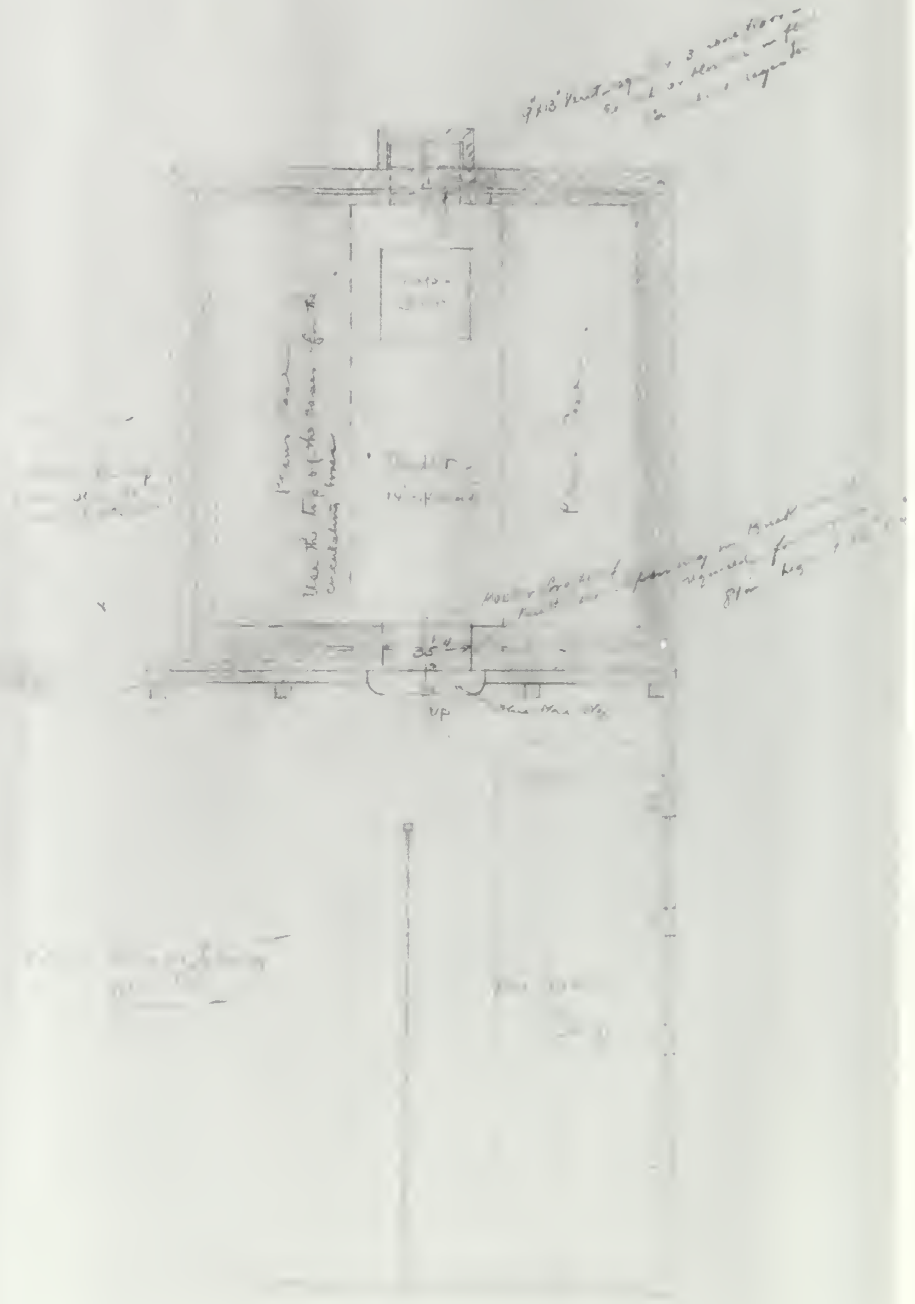


Figure 40. Plans Vault: Floor plan (study for smaller vault that was not built), 1901.

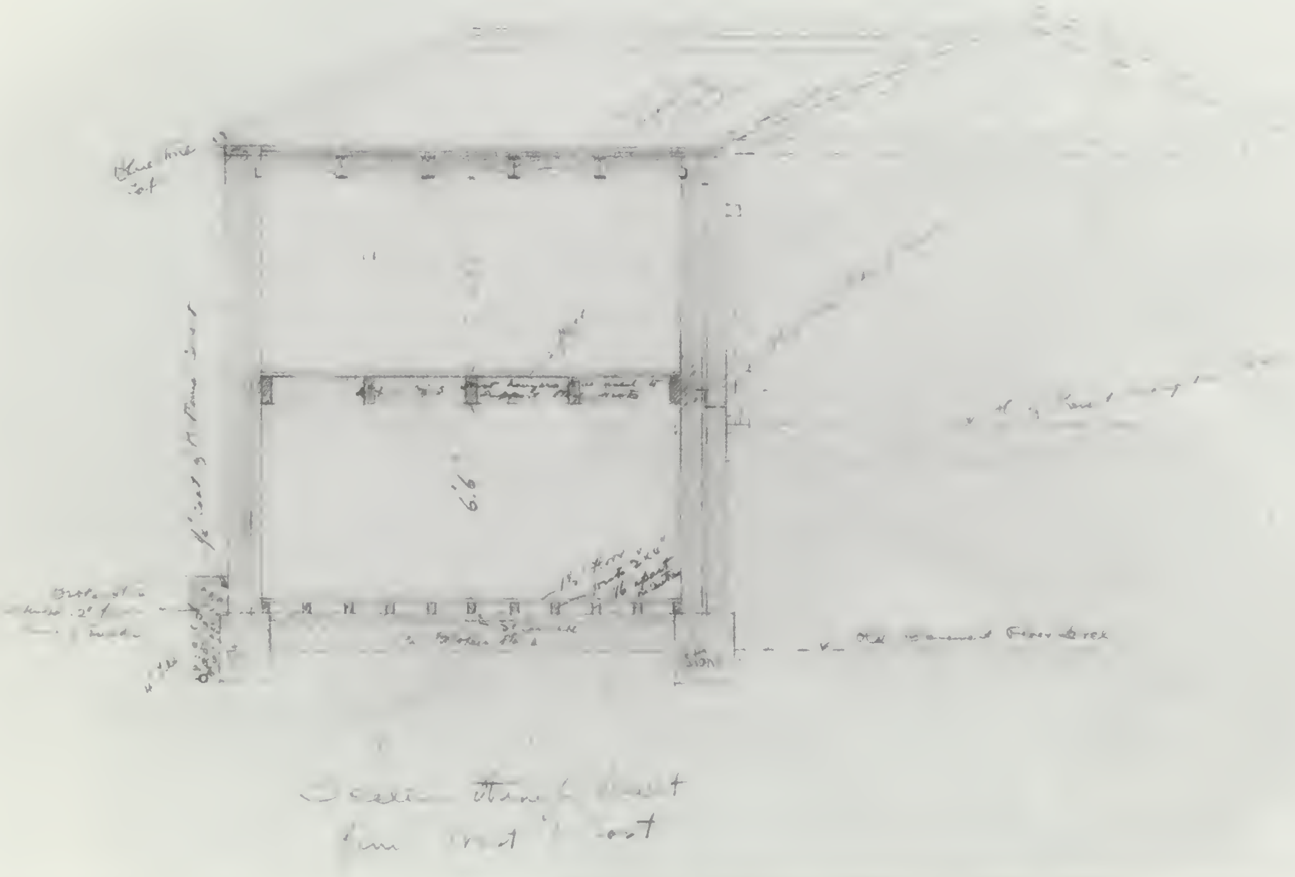


Figure 41. Plans Vault: Section drawing (study for smaller vault that was not built), 1901.

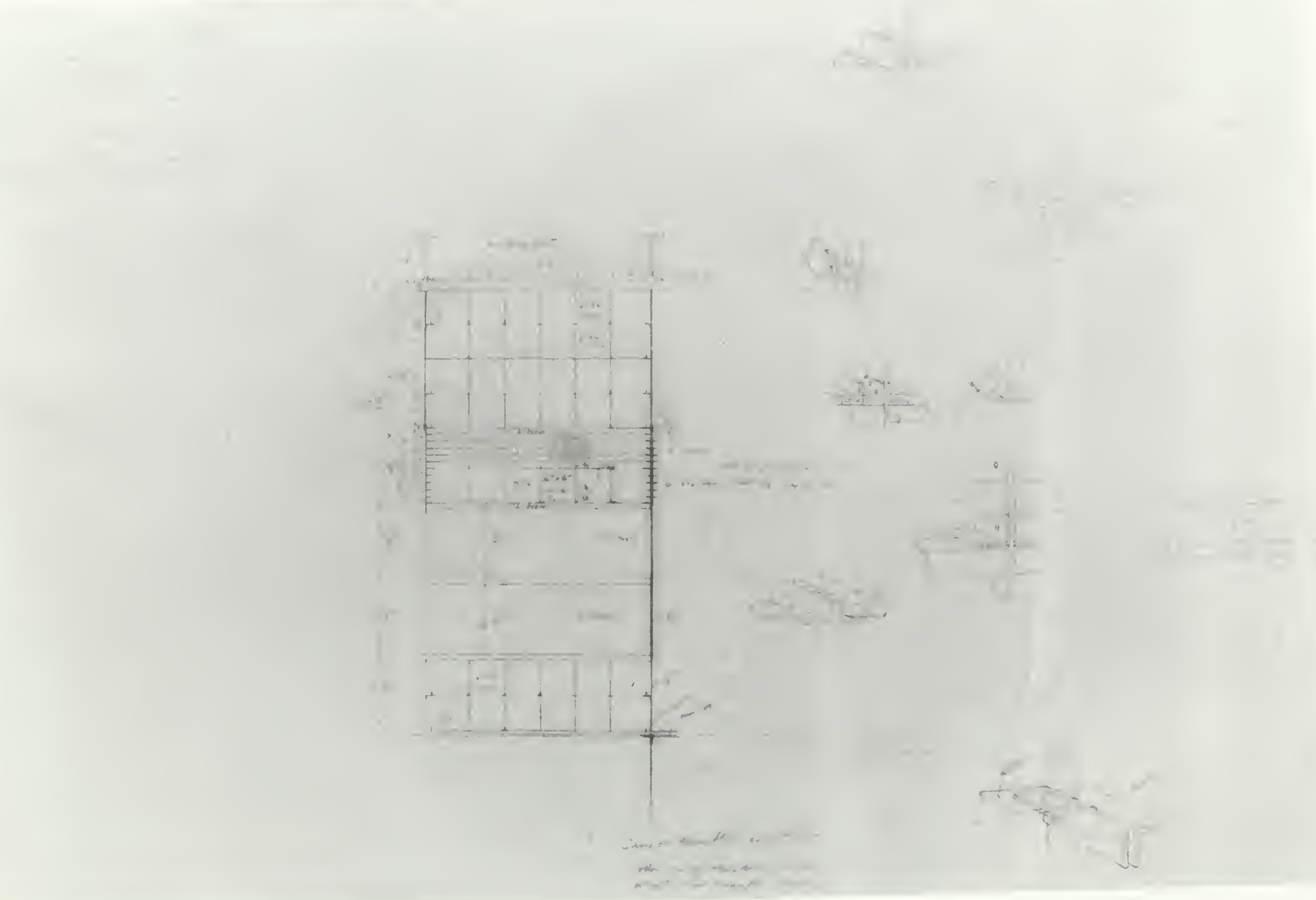


Figure 42. Plans Vault: Study for flat storage system, 1901.

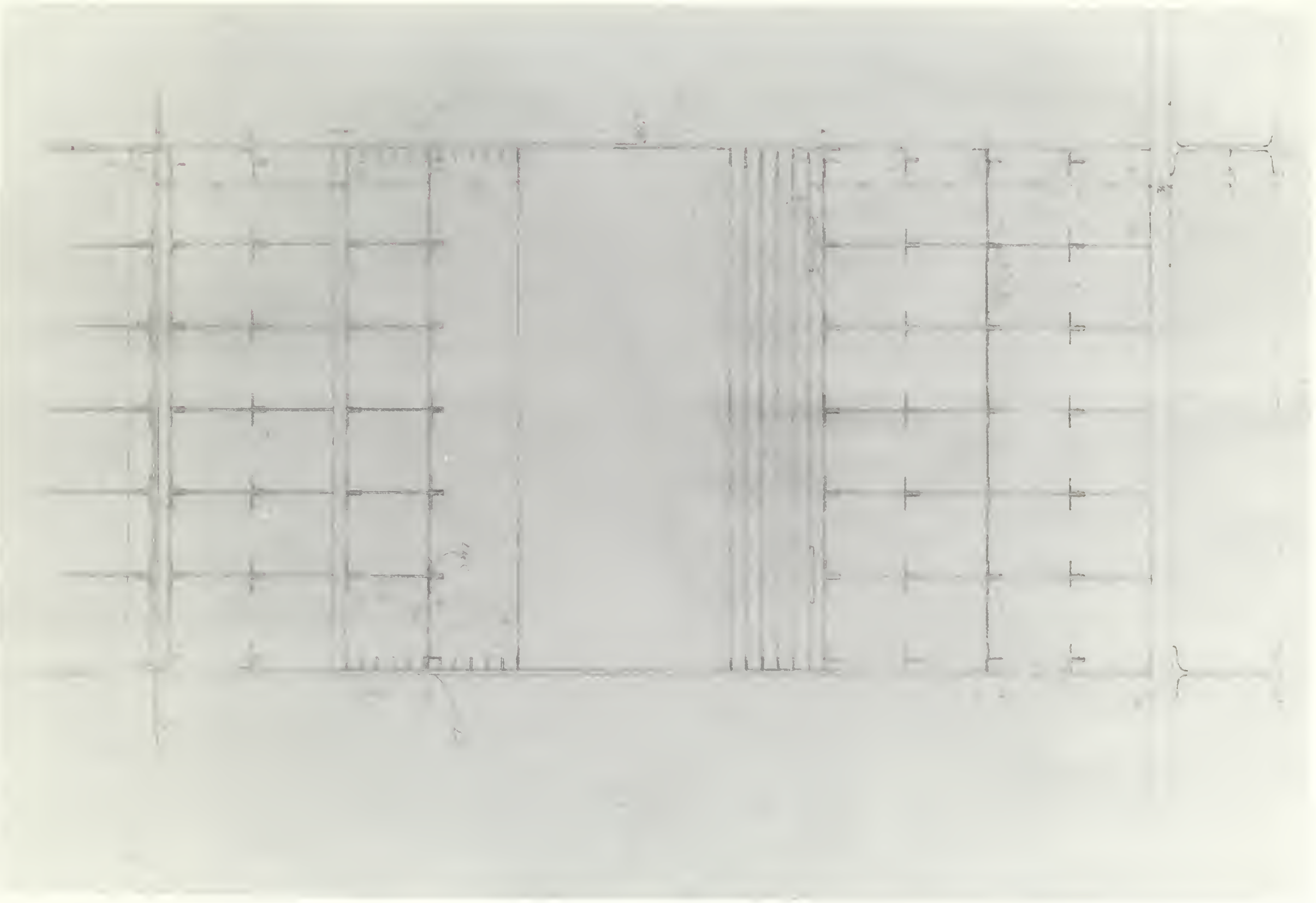


Figure 43. Plans Vault: Study for flat storage system, 1901.

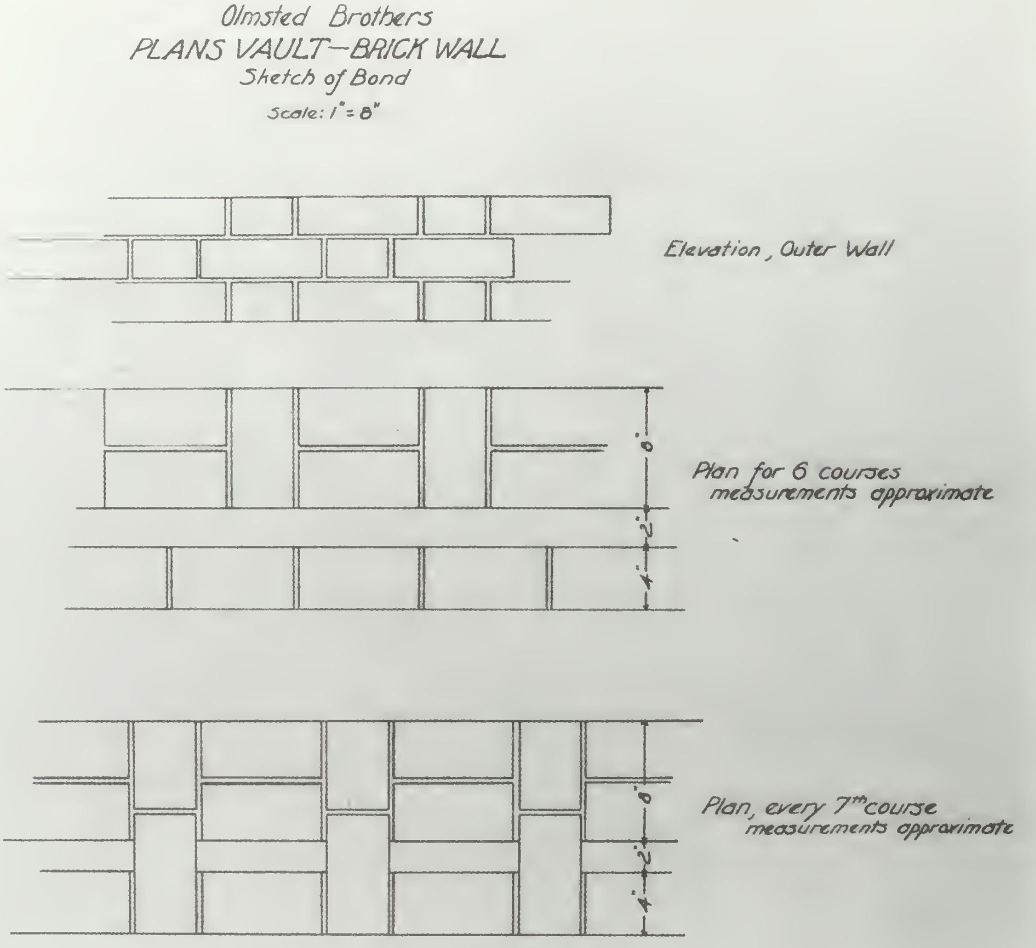


Figure 44. Plans Vault: Drawings for brick wall construction, 1901.

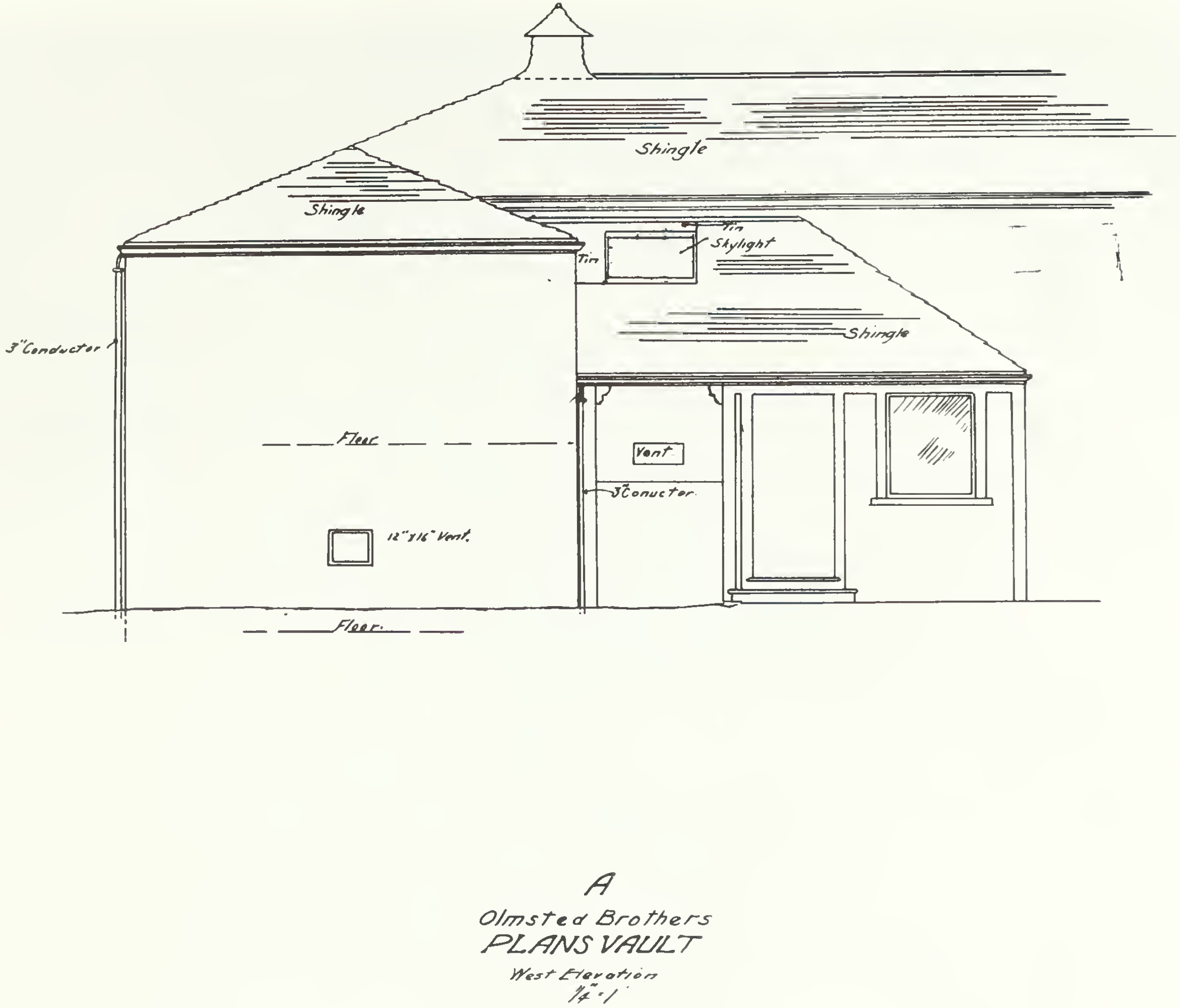


Figure 45. Plans Vault: West elevation drawing, 1901.

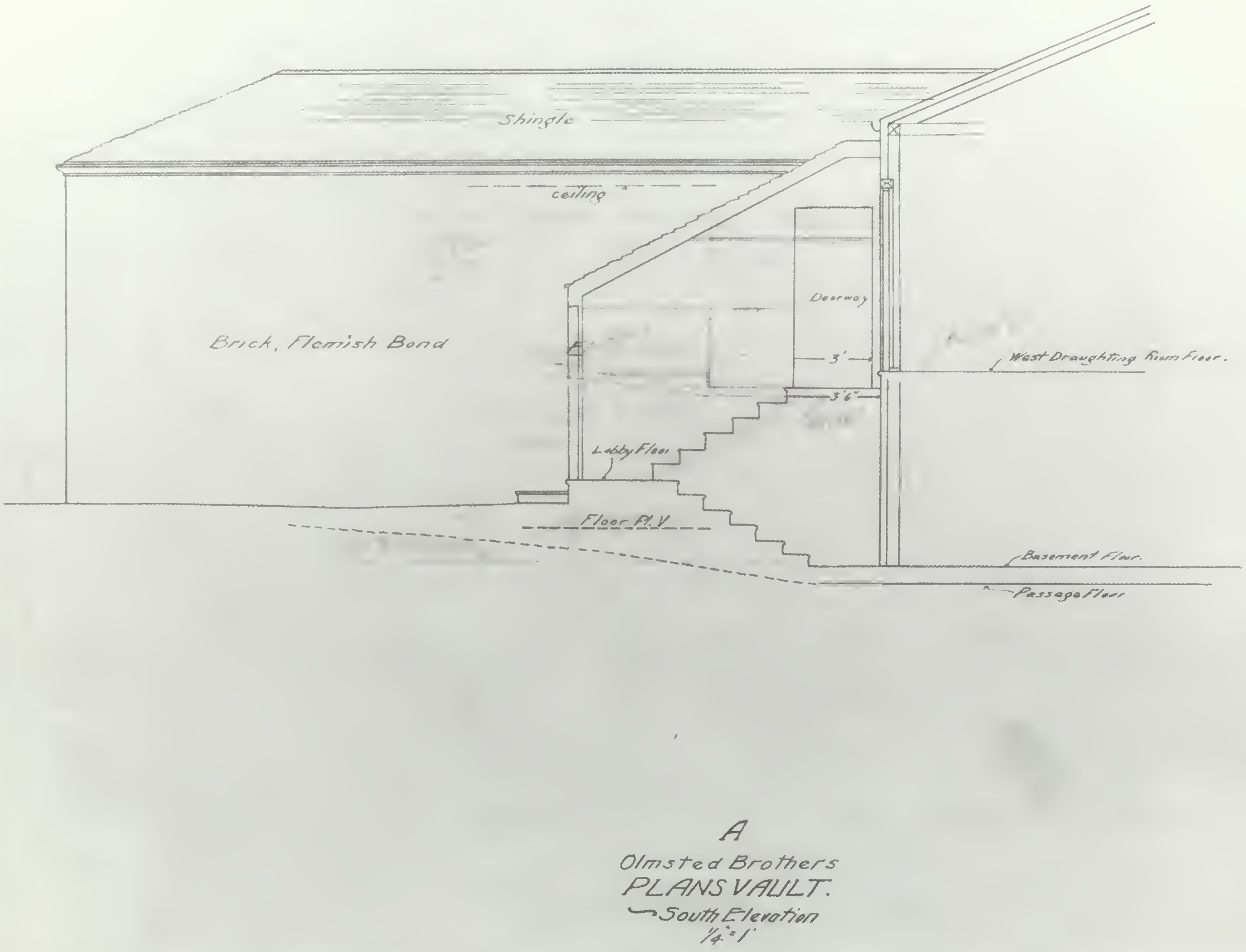


Figure 46. Plans Vault: South elevation drawing, 1901.

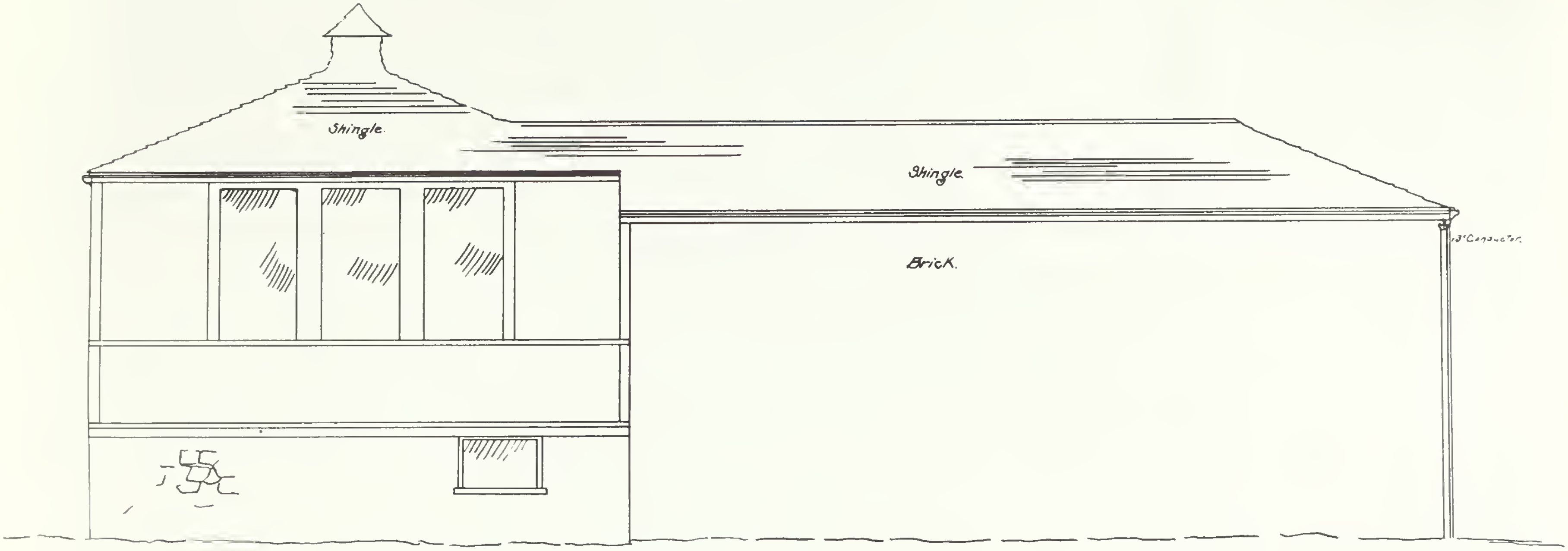


Figure 47. Plans Vault: North elevation drawing, 1901.

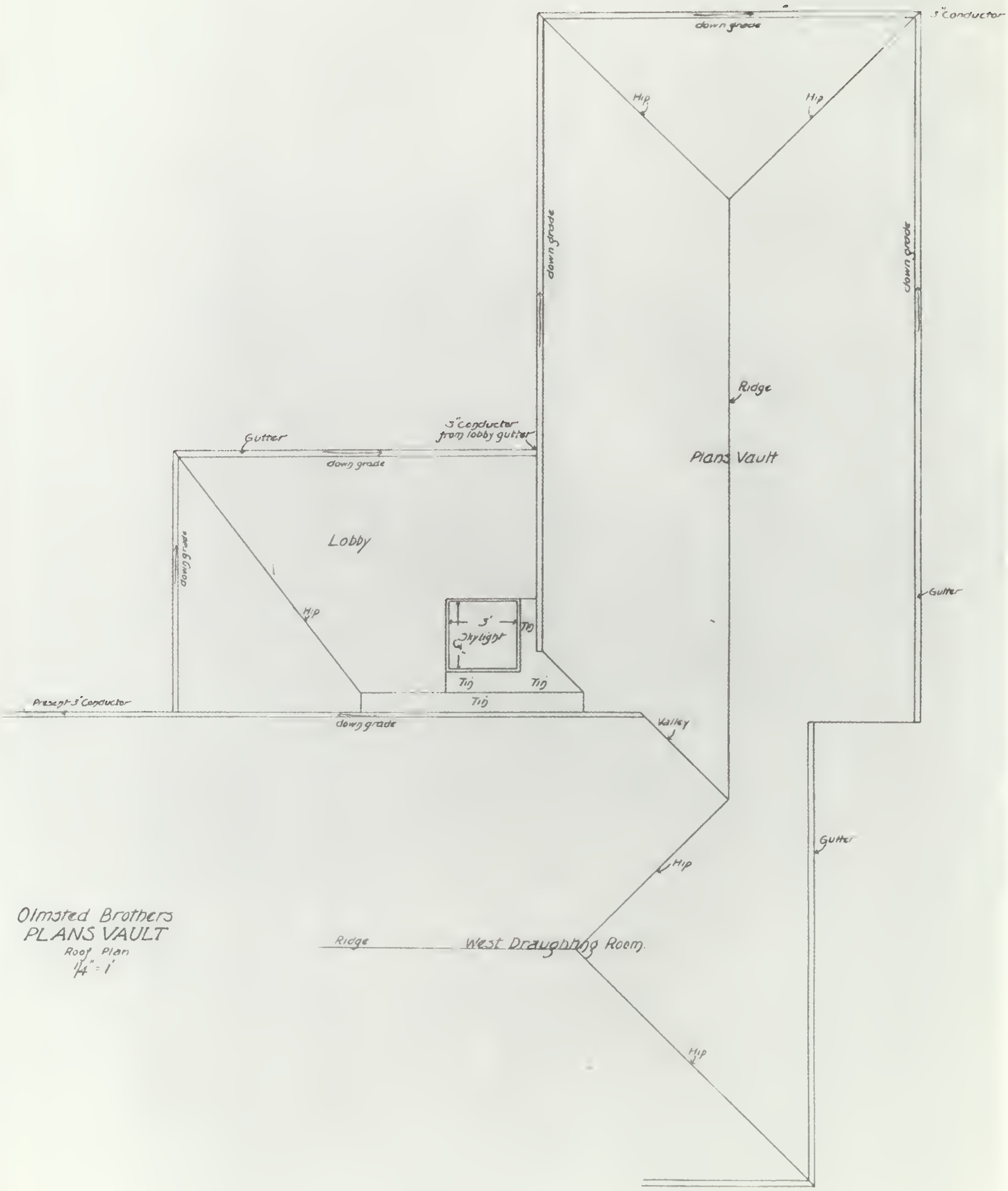


Figure 48. Plans Vault: Roof plan, 1901.

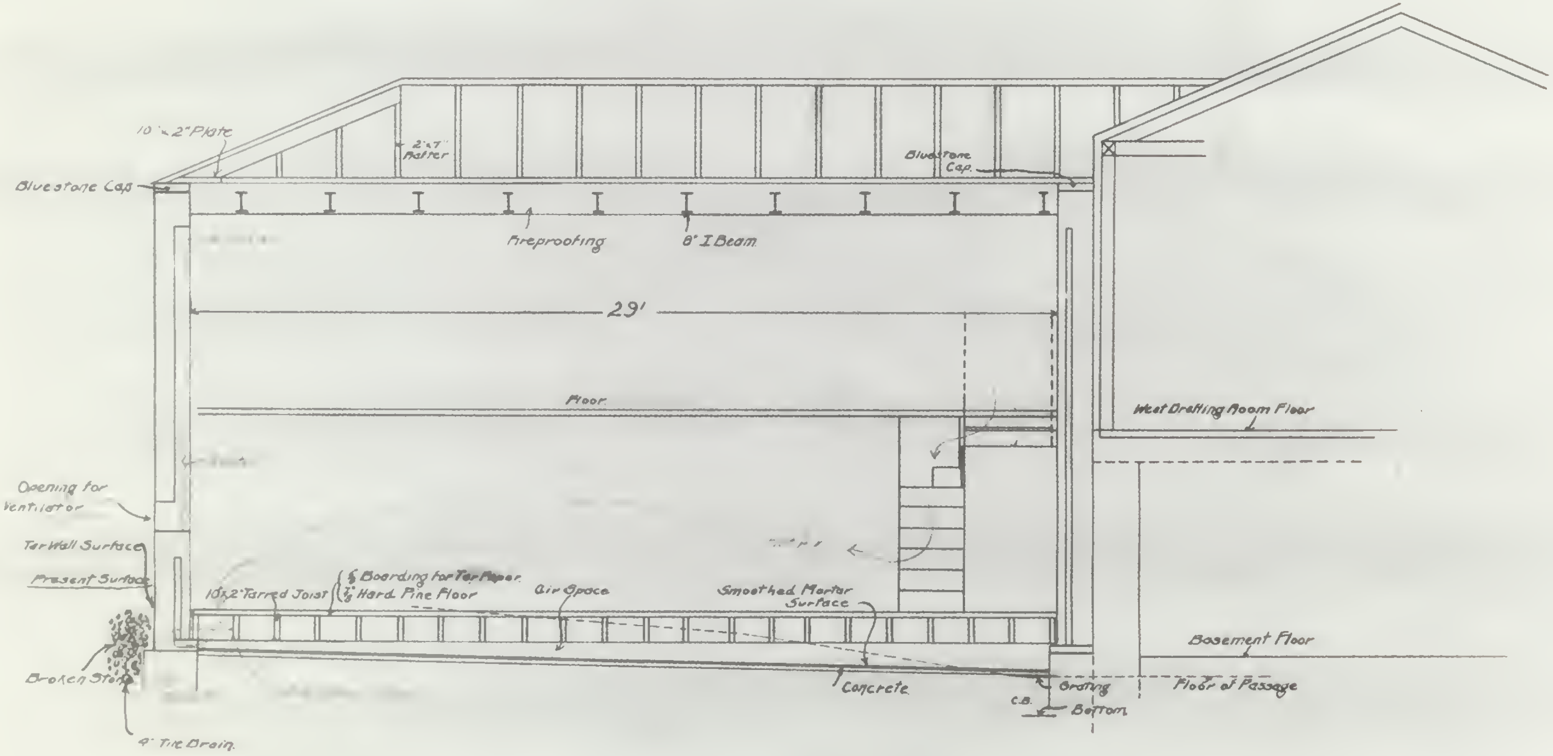


Figure 49. Plans Vault: Section drawing, 1901.

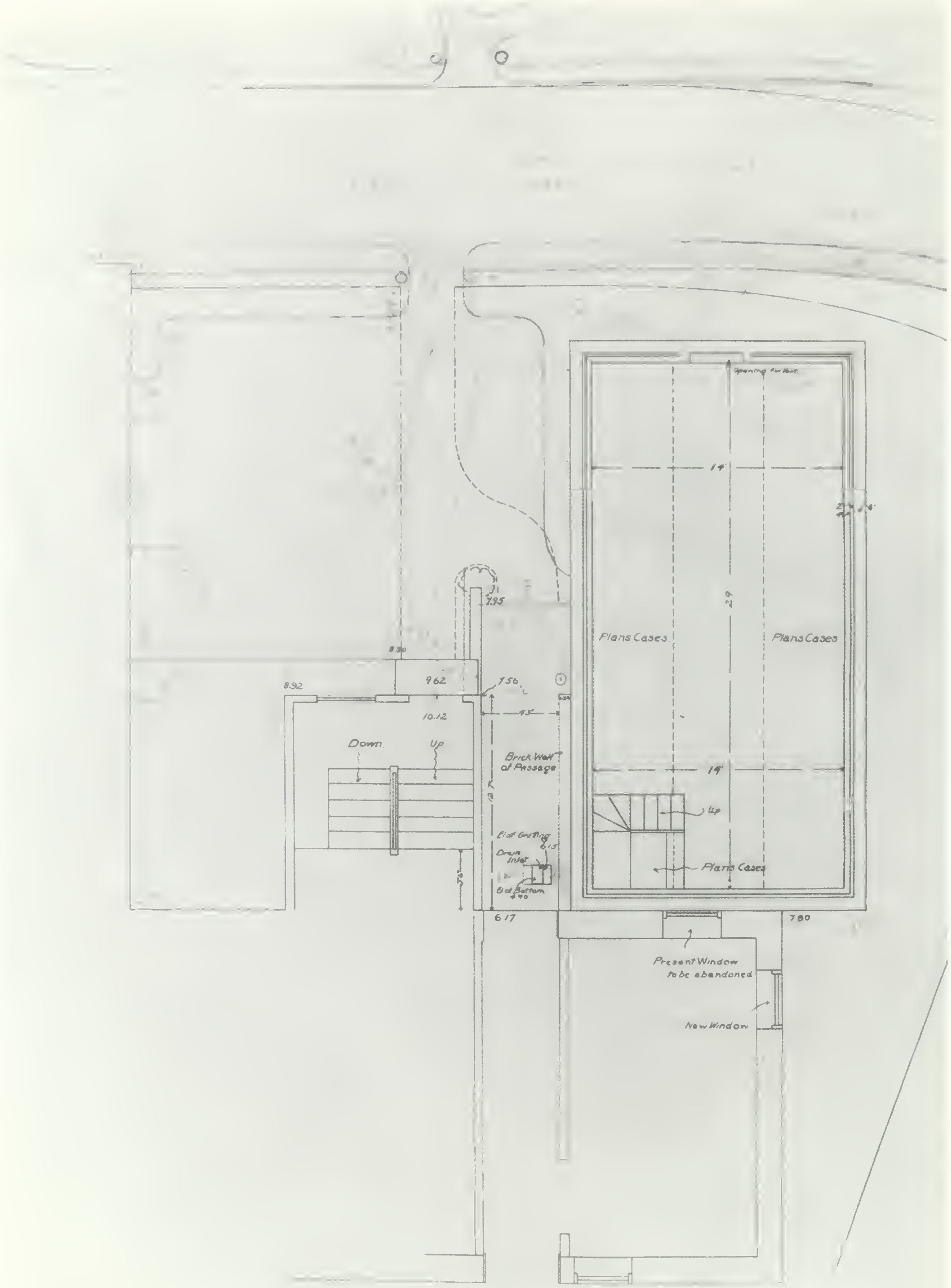


Figure 50. Plans Vault: Floor plan of lower vault, Nov. 20, 1901.

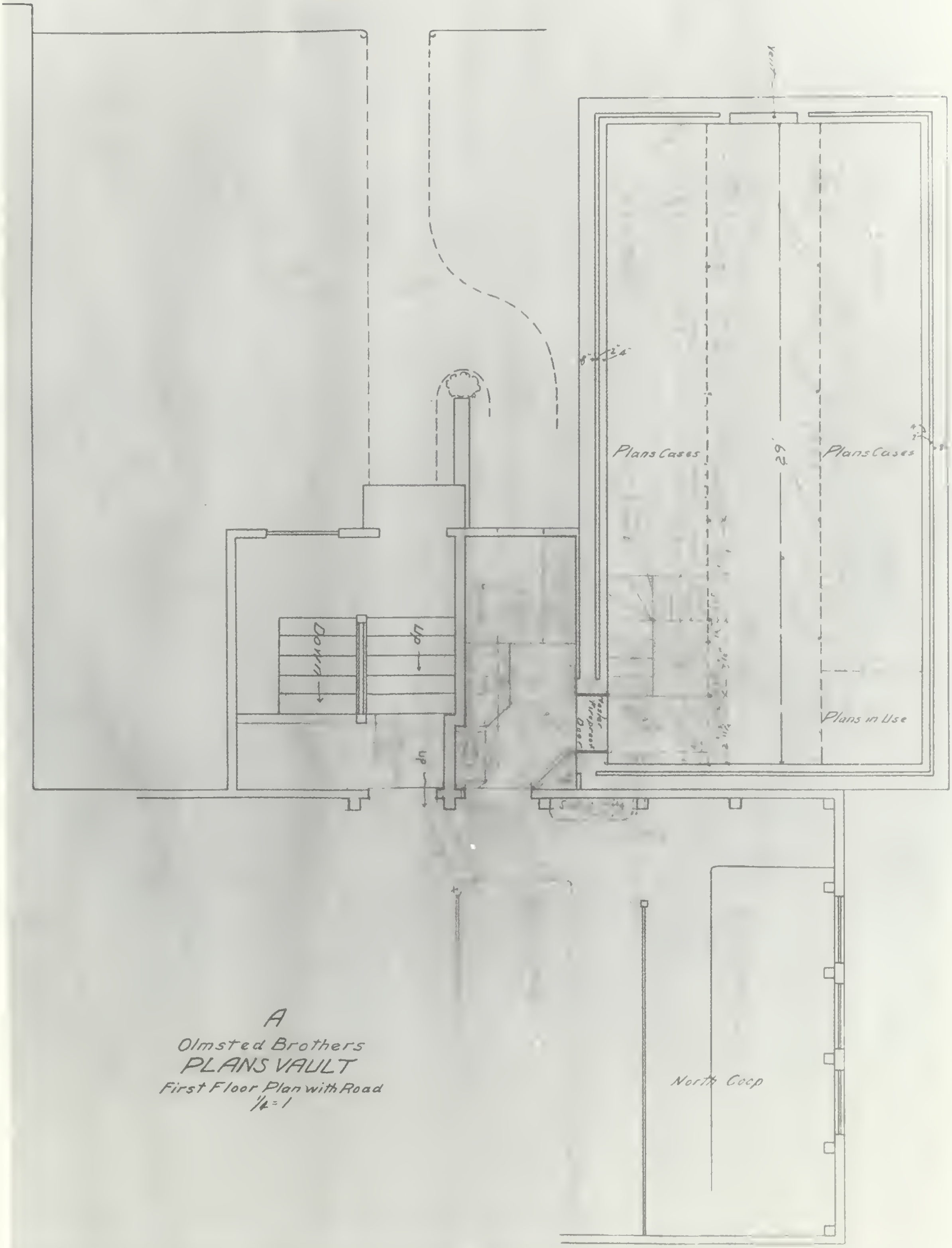


Figure 51. Plans Vault: Floor plan of main vault, 1901.

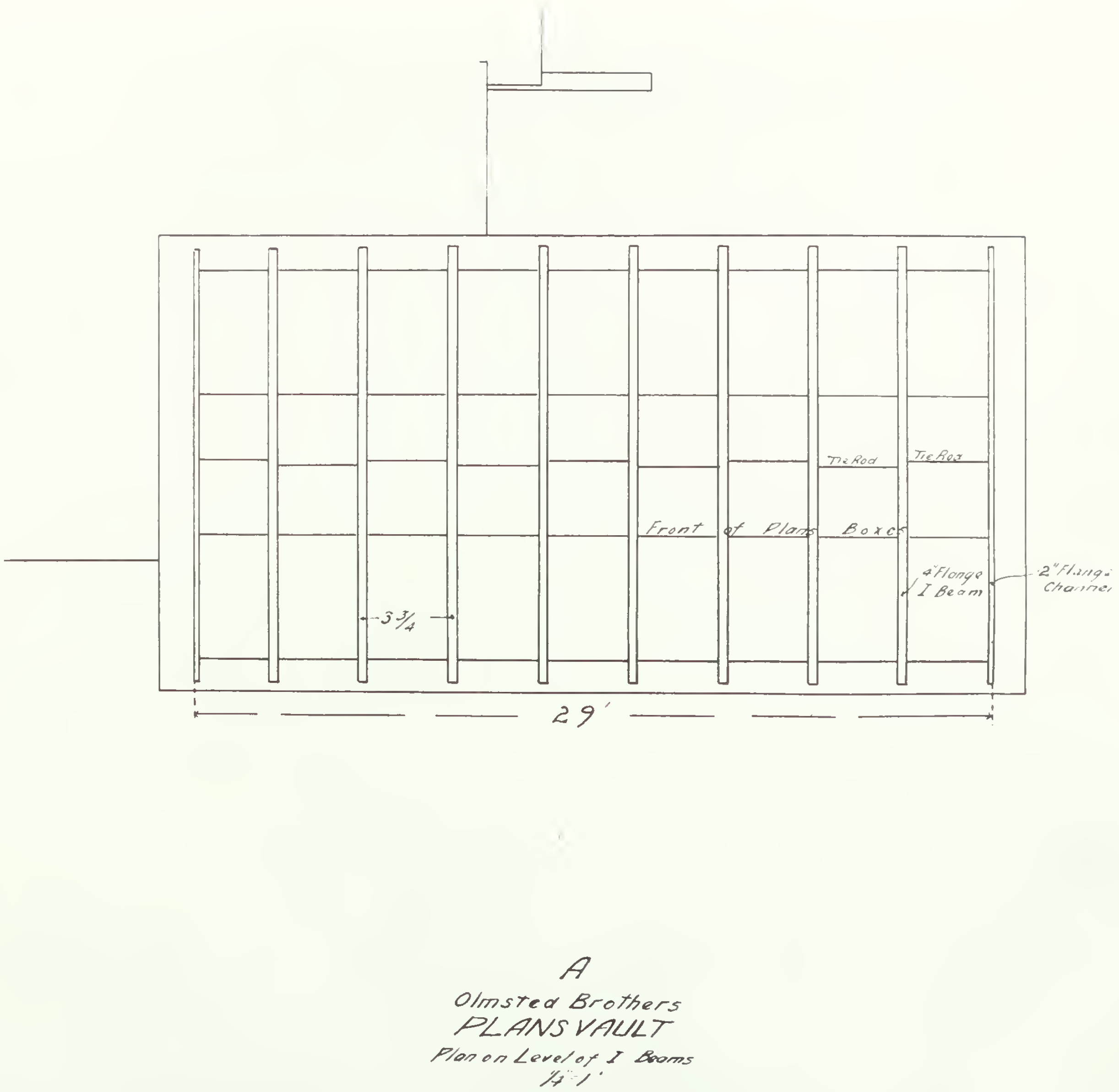


Figure 52. Plans Vault: Plan for I-beams and tie rods, 1901.

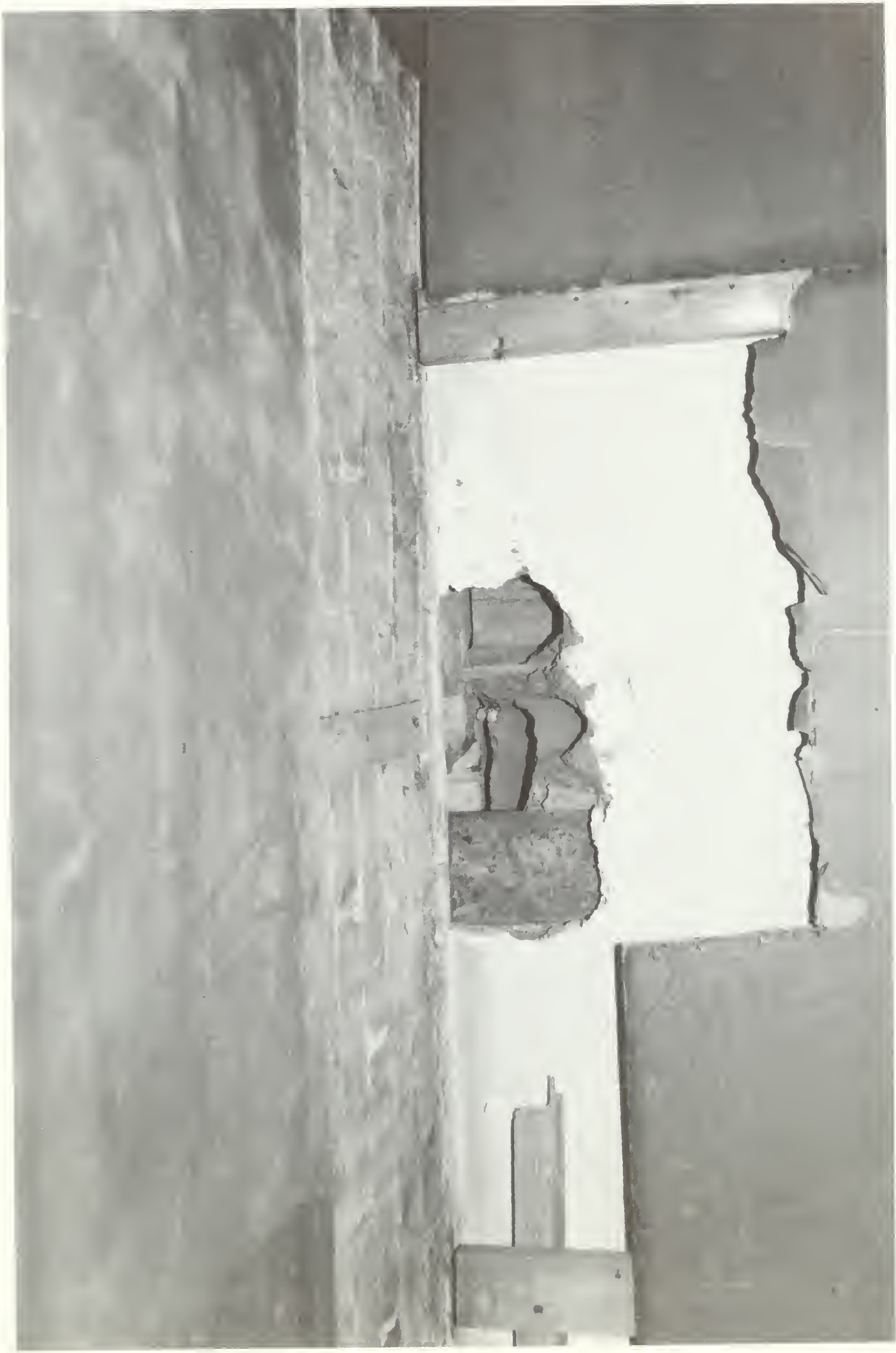


Figure 53. Plans Vault: Main vault, 1902 ceiling of "Compoboard," plaster, steel I-beams, and hollow terra-cotta tile (1984).

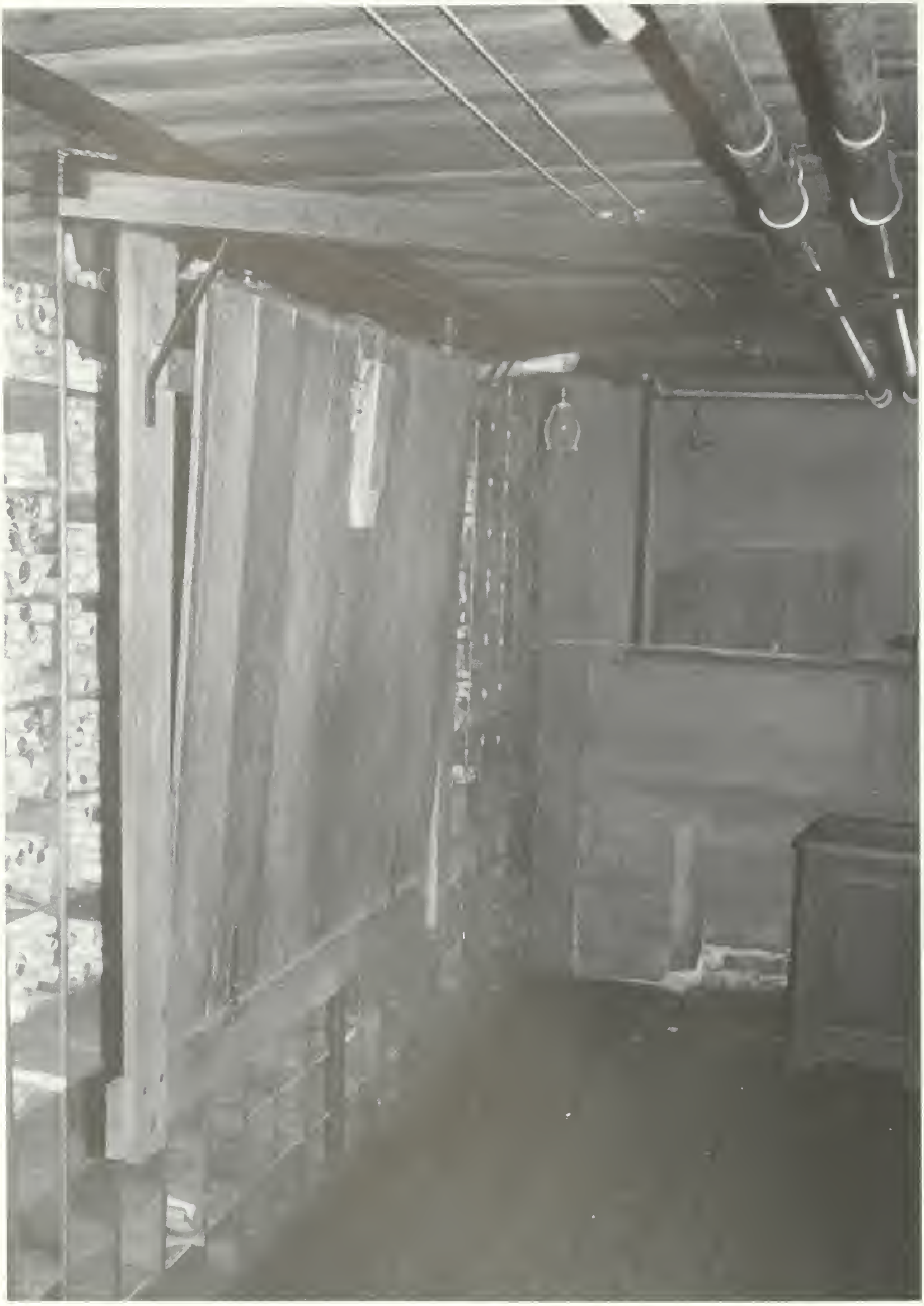


Figure 54. Plans Vault: Lower vault, 1902 sliding plans table (1984).

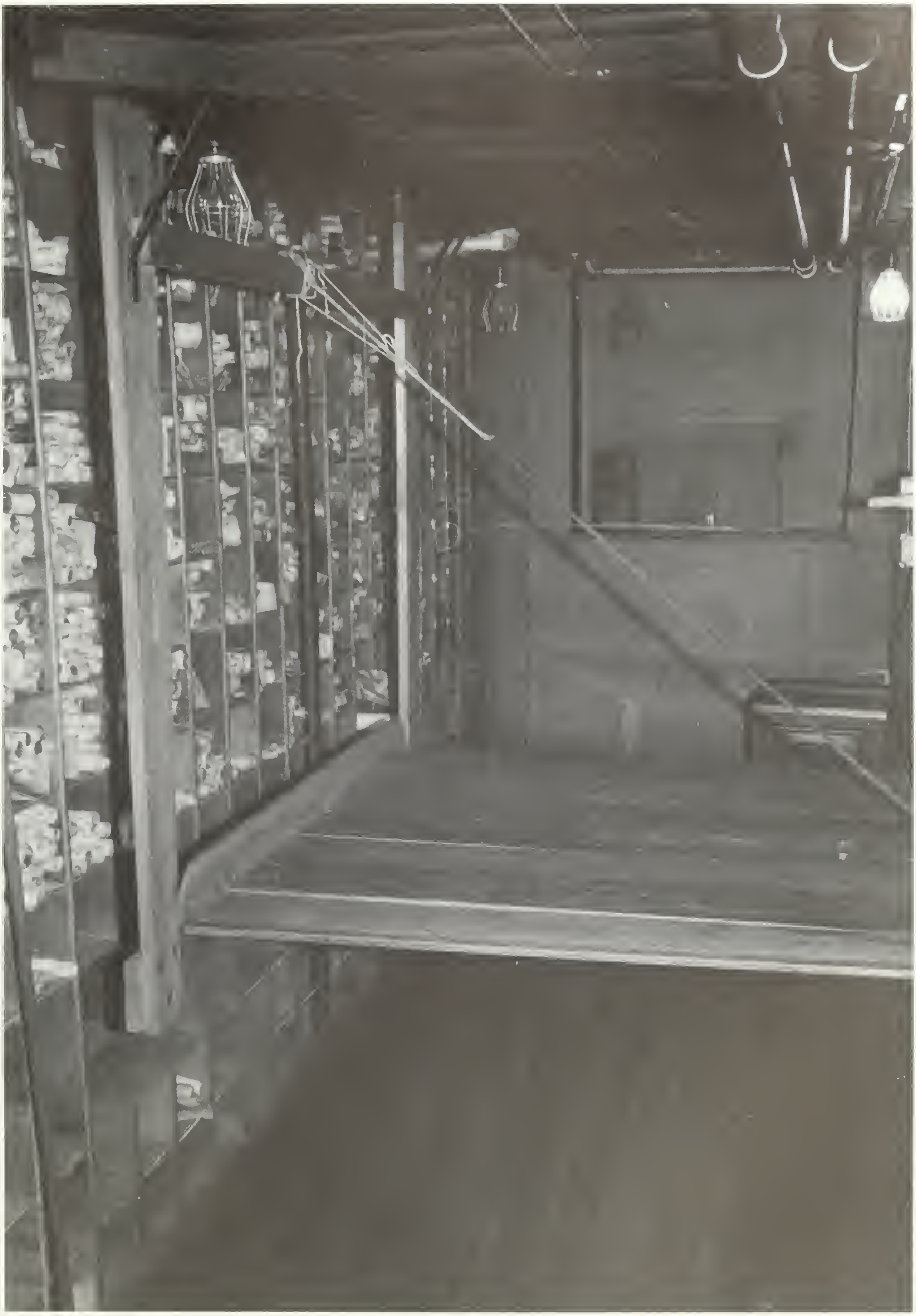


Figure 55. Plans Vault: Lower vault, 1902 sliding plans table (1984).

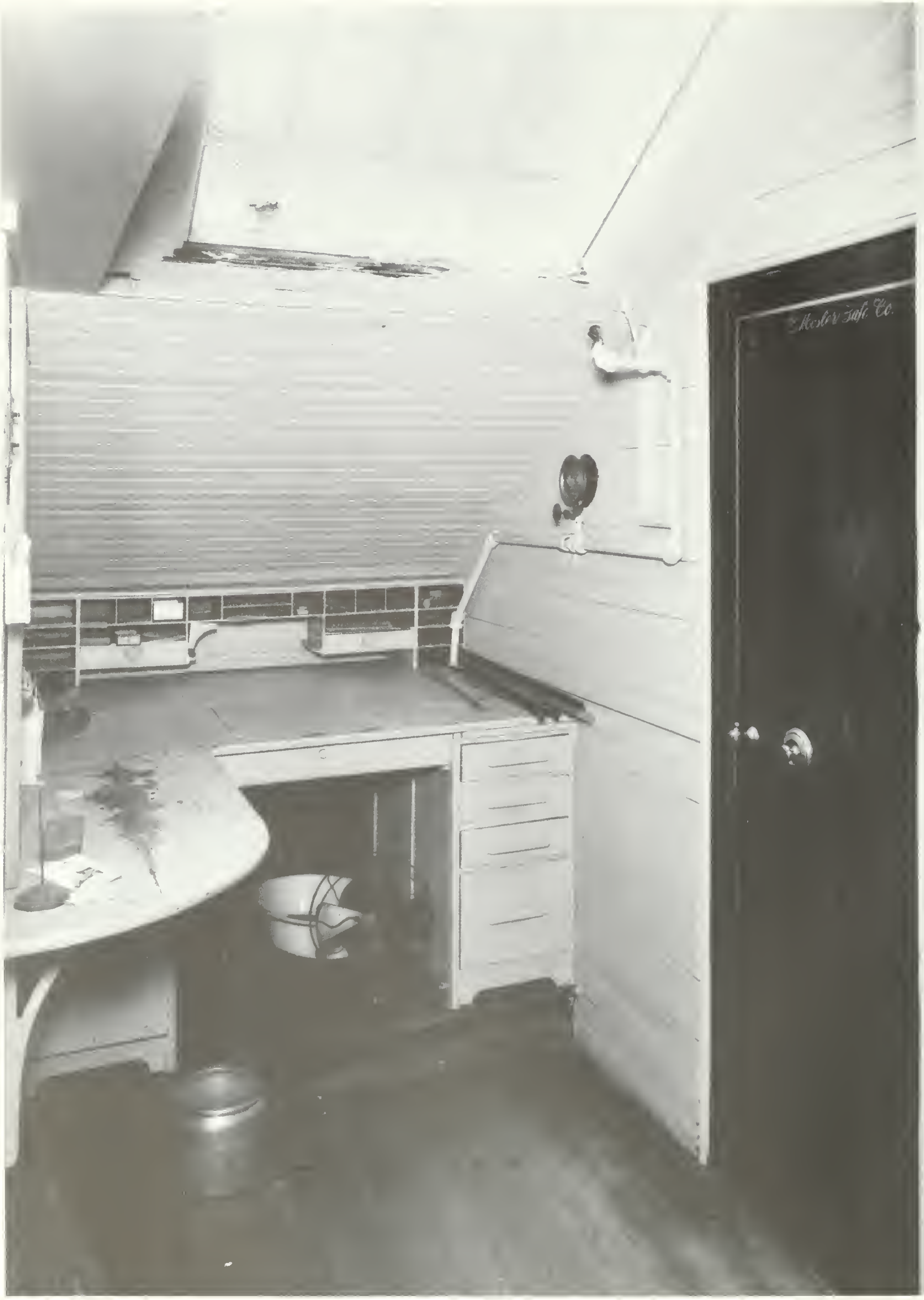


Figure 56. Plans Vault: Plans File Room (1980).

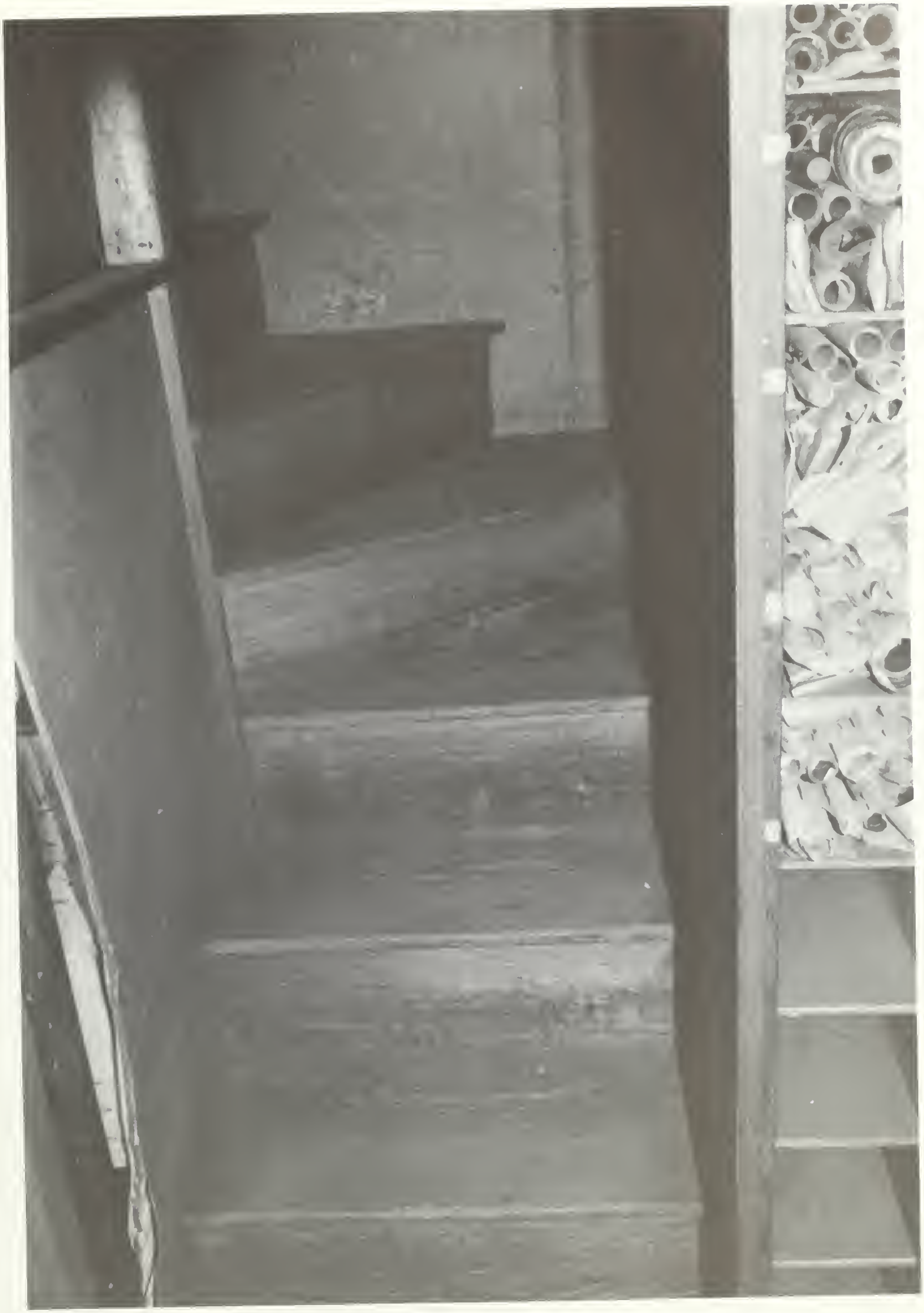


Figure 57. Plans Vault: Main vault, 1910 stairway (1984).

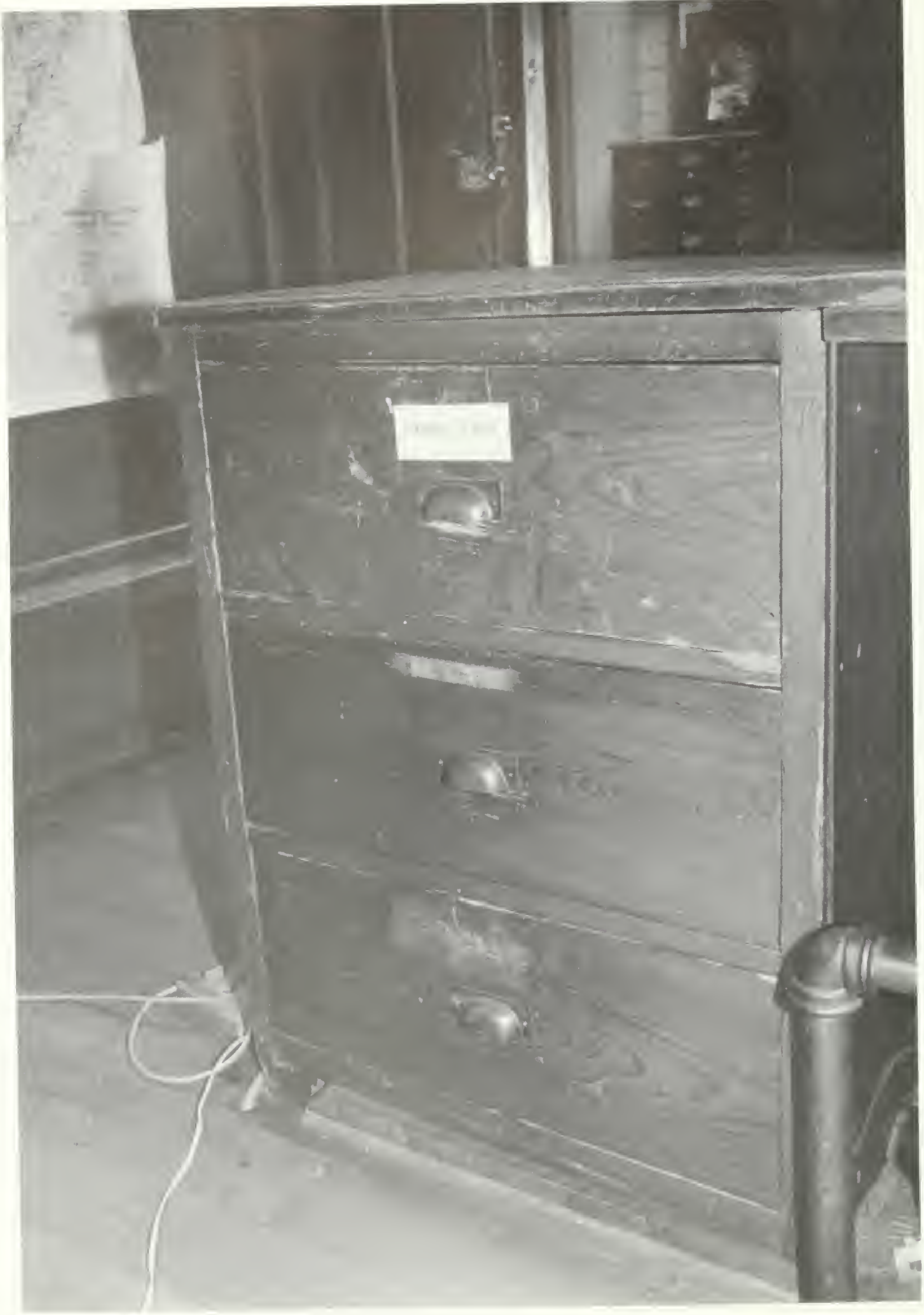


Figure 58. Plans Vault: Main vault, 1910 plans table with drawers beneath (1984).

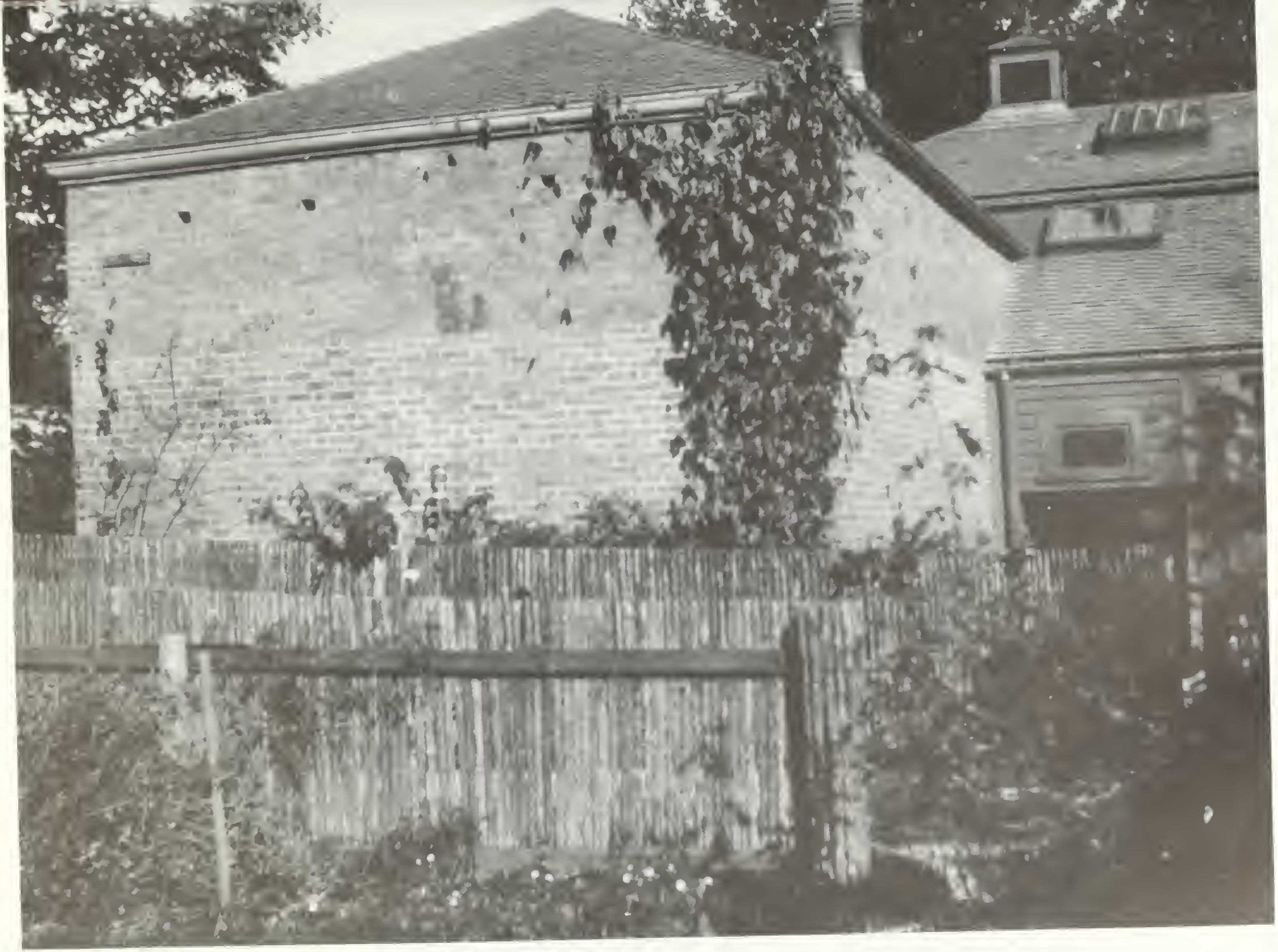


Figure 59. Plans Vault: South and west elevations, circa 1910.

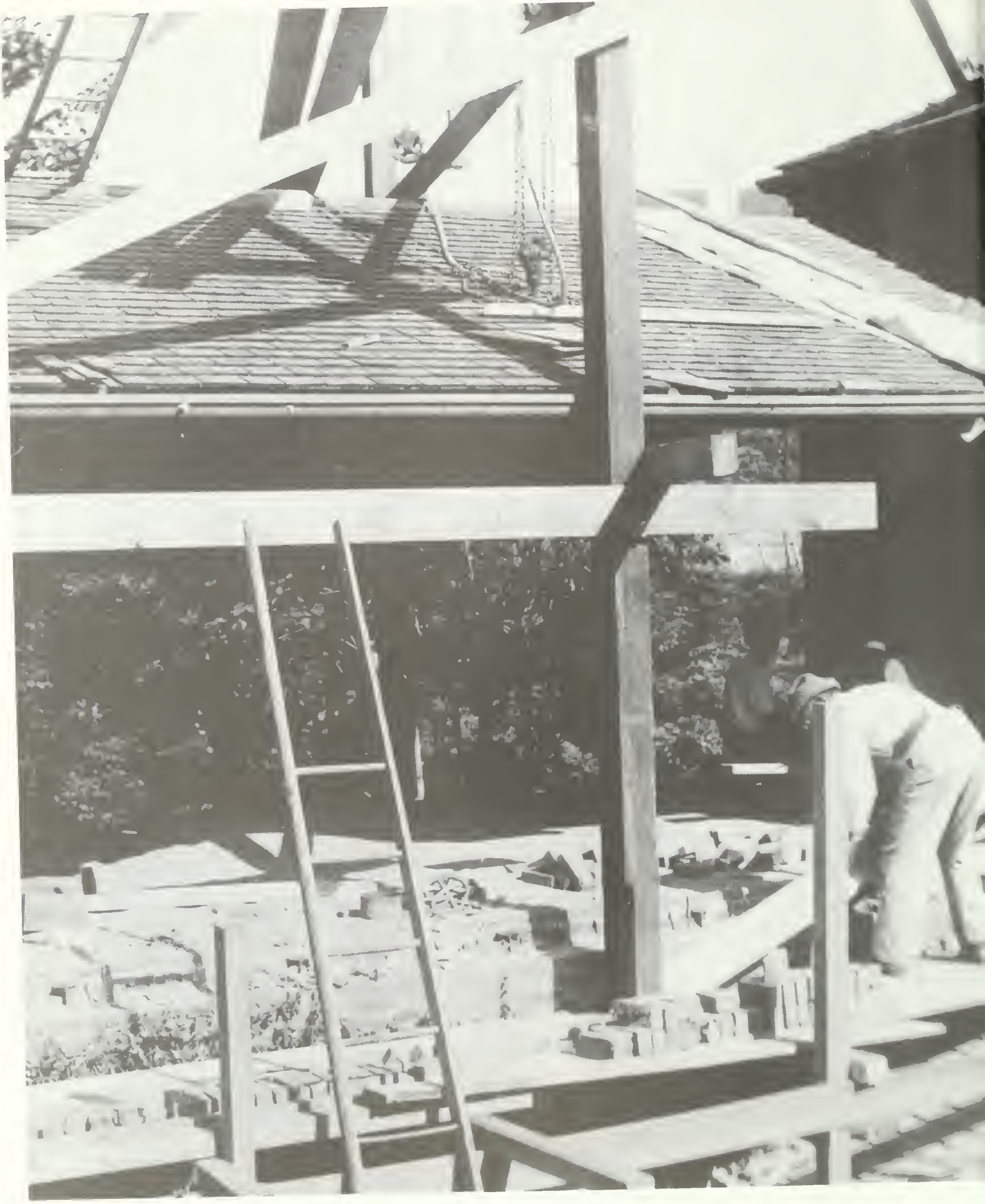


Figure 60. Plans Vault: Upper vault during construction, 1912.

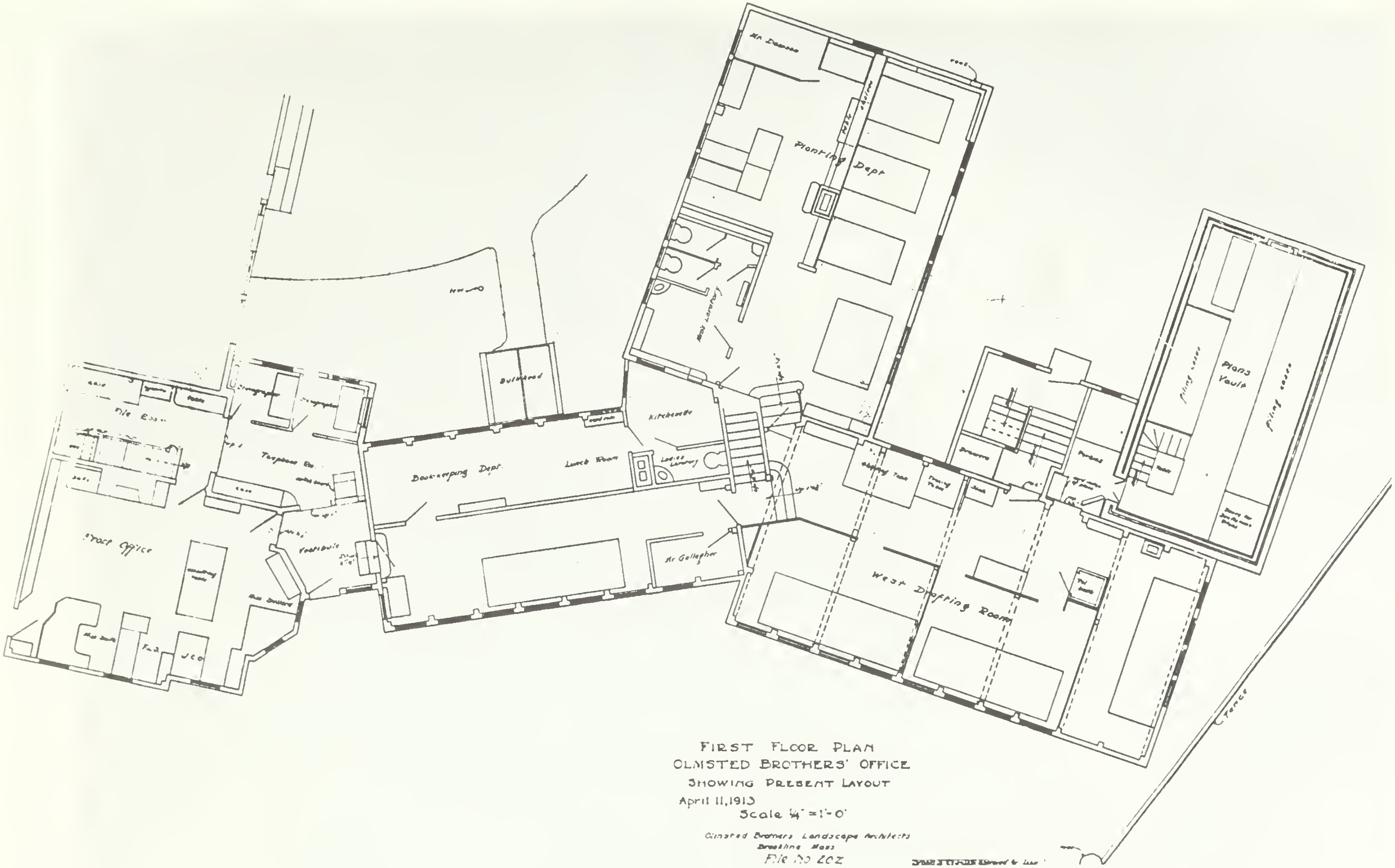


Figure 61. "First Floor Plan, Olmsted Brothers' Office, Showing Present Layout, April 11, 1913."

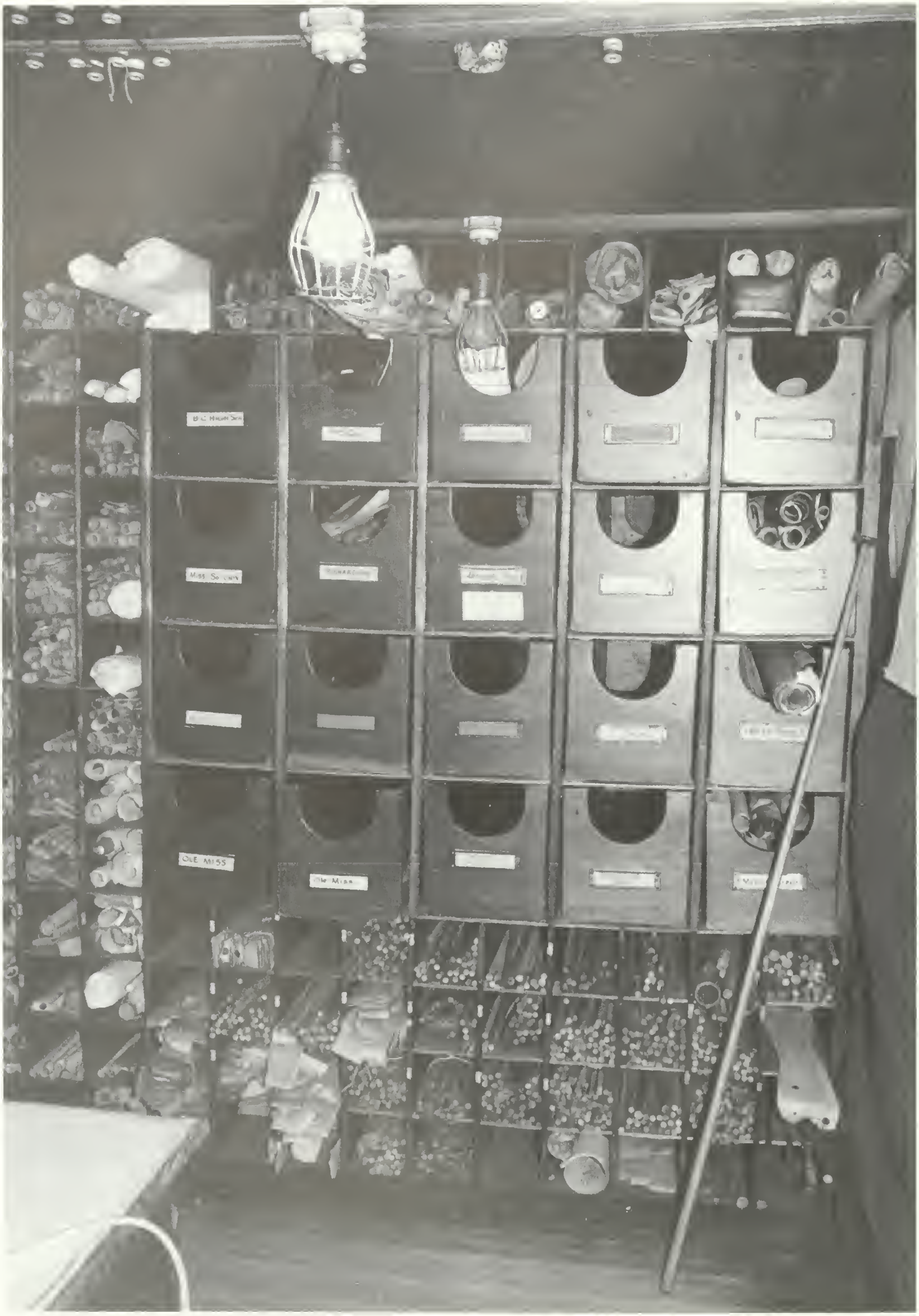


Figure 62. Plans Vault: North wall of middle vault, storage drawers for projects in progress (1984).

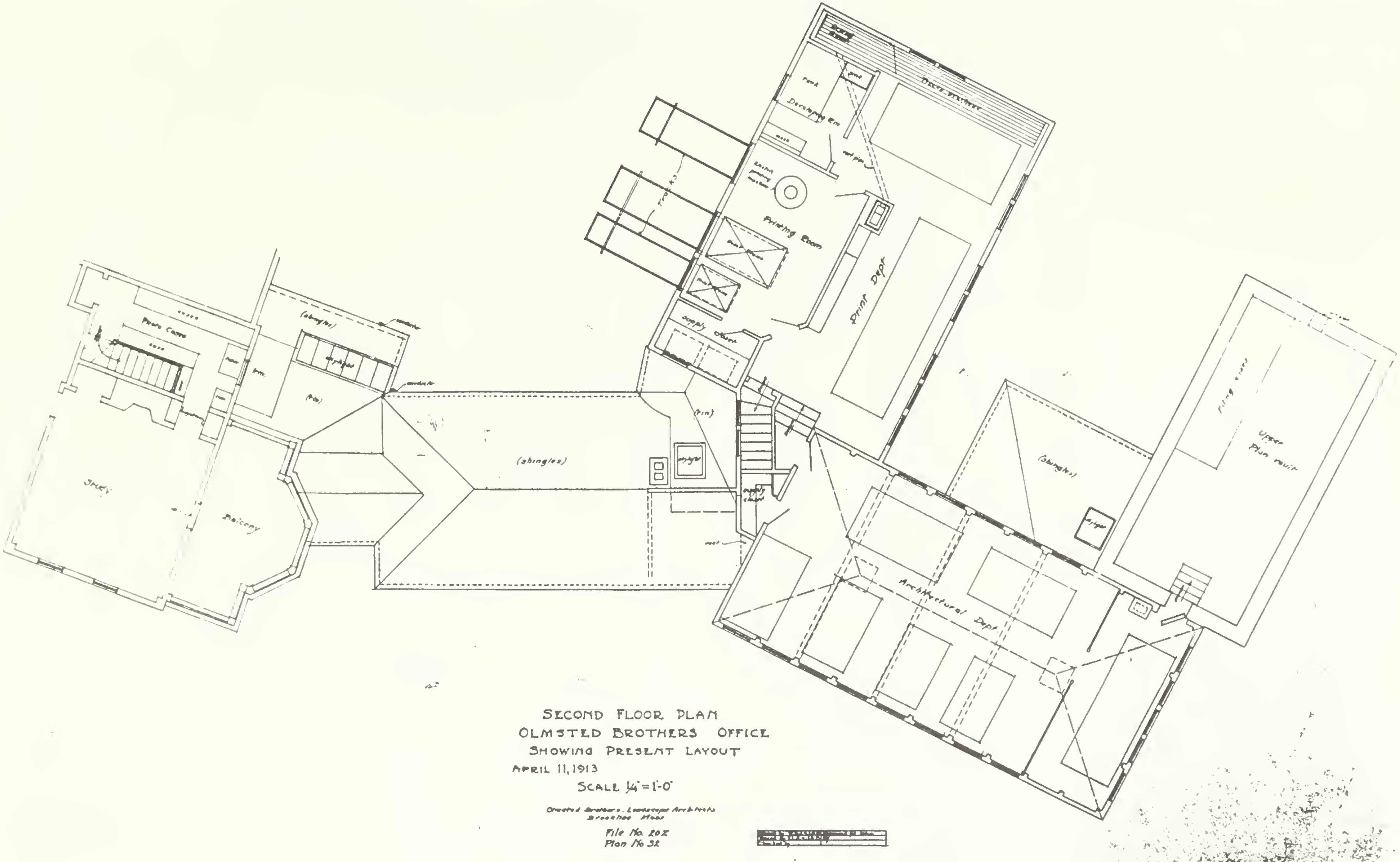


Figure 63. "Second Floor Plan, Olmsted Brothers Office, Showing Present Layout, April 11, 1913."

OFFICES: PROPOSED STRUCTURES/ADDITIONS NOT BUILT

In addition to the drawings for the existing buildings at the Frederick Law Olmsted NHS, the archives include drawings for proposed office additions that were never built. The drawings for the proposed buildings that were not constructed date primarily to the early years of the 20th century, when the firm was growing rapidly. A selection of these drawings is included in this report.

Apparently a primary goal was more space for file and photograph storage. An undated drawing (fig. 64) depicts a modest one-story addition for this purpose along the west side of the Front Entry and part of the Clerical Department. A different location for file storage is seen in a first-floor plan (fig. 65) dated February 20, 1913, which depicts a file vault that would have filled the courtyard between the Planting Department and the Plans Vault. This plan also seems to propose changes to other areas of the first-story office space. The entrance to the offices was to be moved to the north end of the North Drafting Wing. The offices of the firm's partners were to be moved from the North Parlor to the east side of the North Drafting Wing. The Clerical Department was to be opened up and used for drafting, while a lunchroom was to be created in the Planting Department.

Elements of both proposals are seen in a first-floor plan (fig. 66) dated April 11, 1913. This drawing depicts a brick file vault along the west elevation of the Clerical Department, and another addition occupying only part of the courtyard. The latter addition would have extended between the Planting Department and the Plans Vault at the second-story level, but a "passage" would be retained at first-story level into the remainder of the courtyard. This addition was to be of wood-frame construction, and used for drafting. Figure 66 also shows that a three-sided bay was proposed for the east wall of the Clerical Department.

Drawings prepared a few months later suggest that the idea of a file vault west of the Clerical Department had been abandoned. Instead, a scheme much like that of February 20 was being proposed. A first-floor plan dated September 29 (fig. 67) and a west-elevation drawing dated November 3 (fig. 68) show a two-story "file vault" that filled the entire courtyard between the Planting Department and the Plans Vault. The work would also include a rearranging of first-story office space, but in a slightly different manner than proposed in the February 20 plan.

In 1928, extensive alterations were proposed for the barn to remodel it for office space (figs. 69-70). On the exterior, the first story was to be sheathed with brick, the second story with clapboards. The roof was to be covered with slate. This building was to be connected to the Planting Department by a second-story walkway, across the back driveway. The first story of this building was to be used for the model shop and studio. A garage was located at its south end. The second story was to be used for drawing and photograph printing. It is interesting to note that the 1928 drawings call for two sun-printing racks on the southeast second-story elevation, even though an electric print frame is also shown on the second-story plan.

All of these drawings reveal that the Olmsted Brothers firm was continually contemplating changes and additions to its space during the early years of the 20th century. However, the Depression of the 1930's significantly reduced the number of firm projects, and the size of the firm itself. The firm continued to practice, but it never recovered from this decline. With its reduced size and revenues, the firm's need to expand ceased, and thus so did the drawings for proposed additions to the offices.

FIGURES FOR PROPOSED STRUCTURES/ADDITIONS NOT BUILT

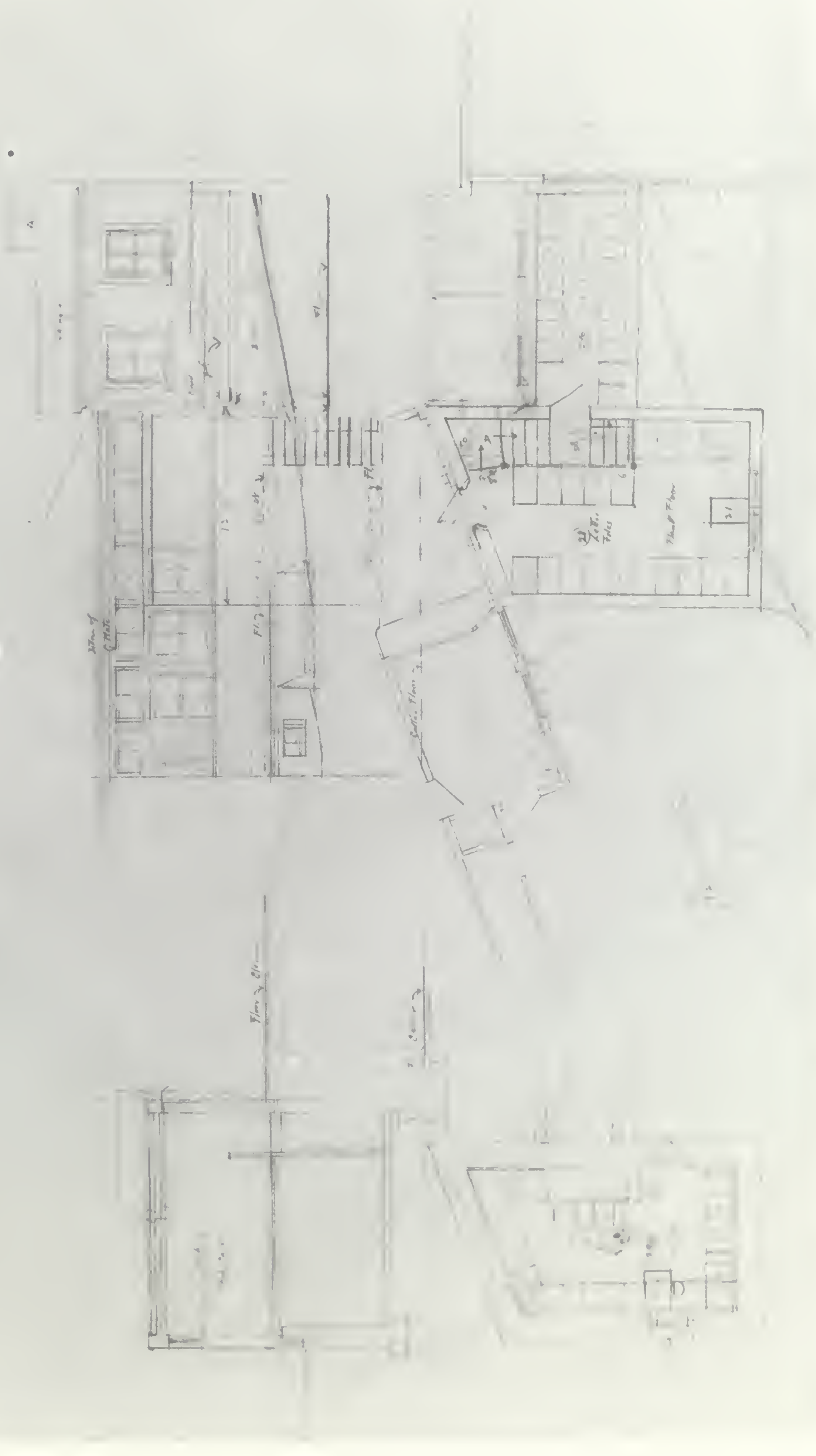


Figure 64. Drawing for proposed file-room addition to west elevations of Front Entry and Clerical Department, circa 1913.

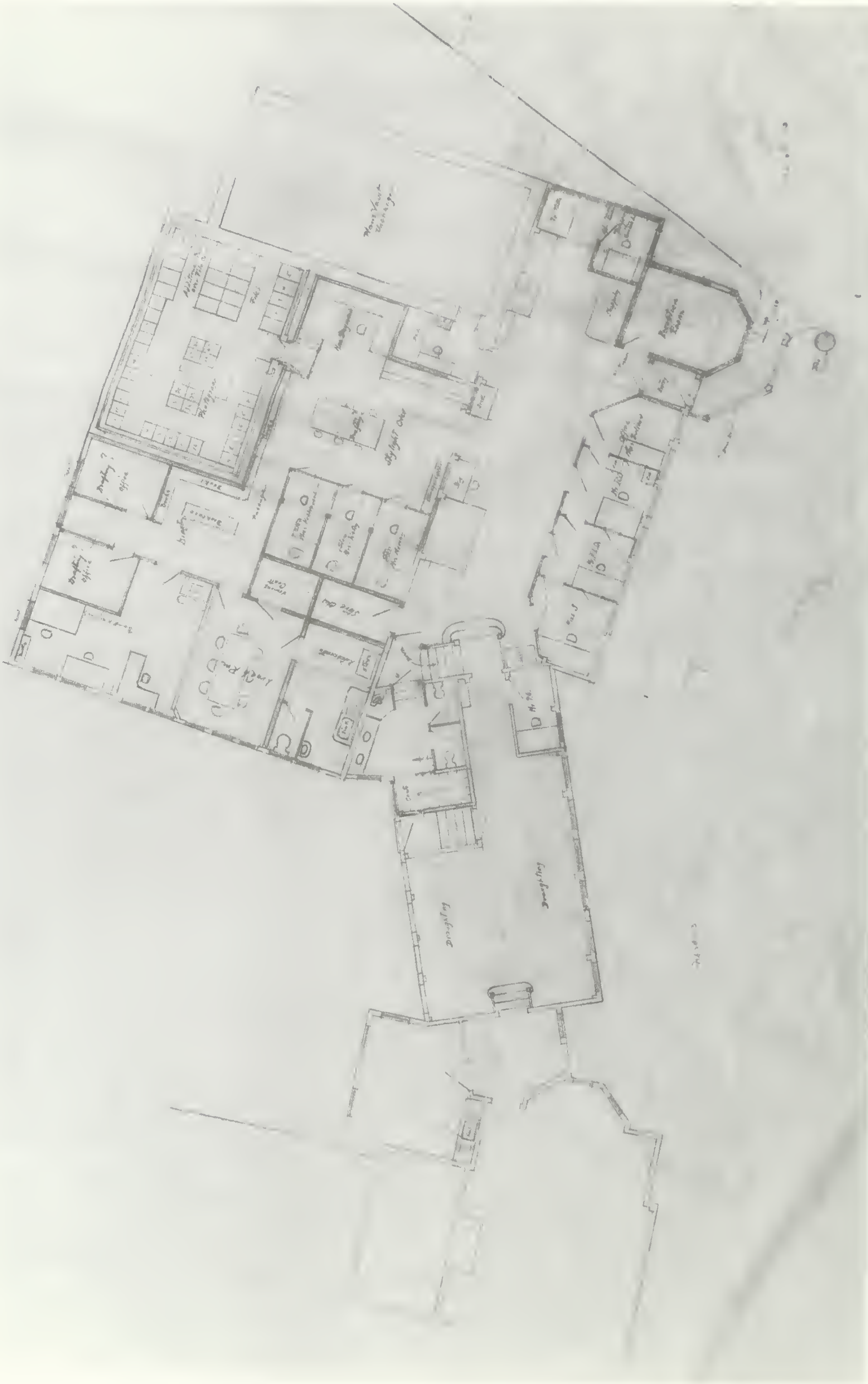


Figure 65. First-floor plan for proposed new file room between Planting Department and Plans Vault, February 20, 1913.

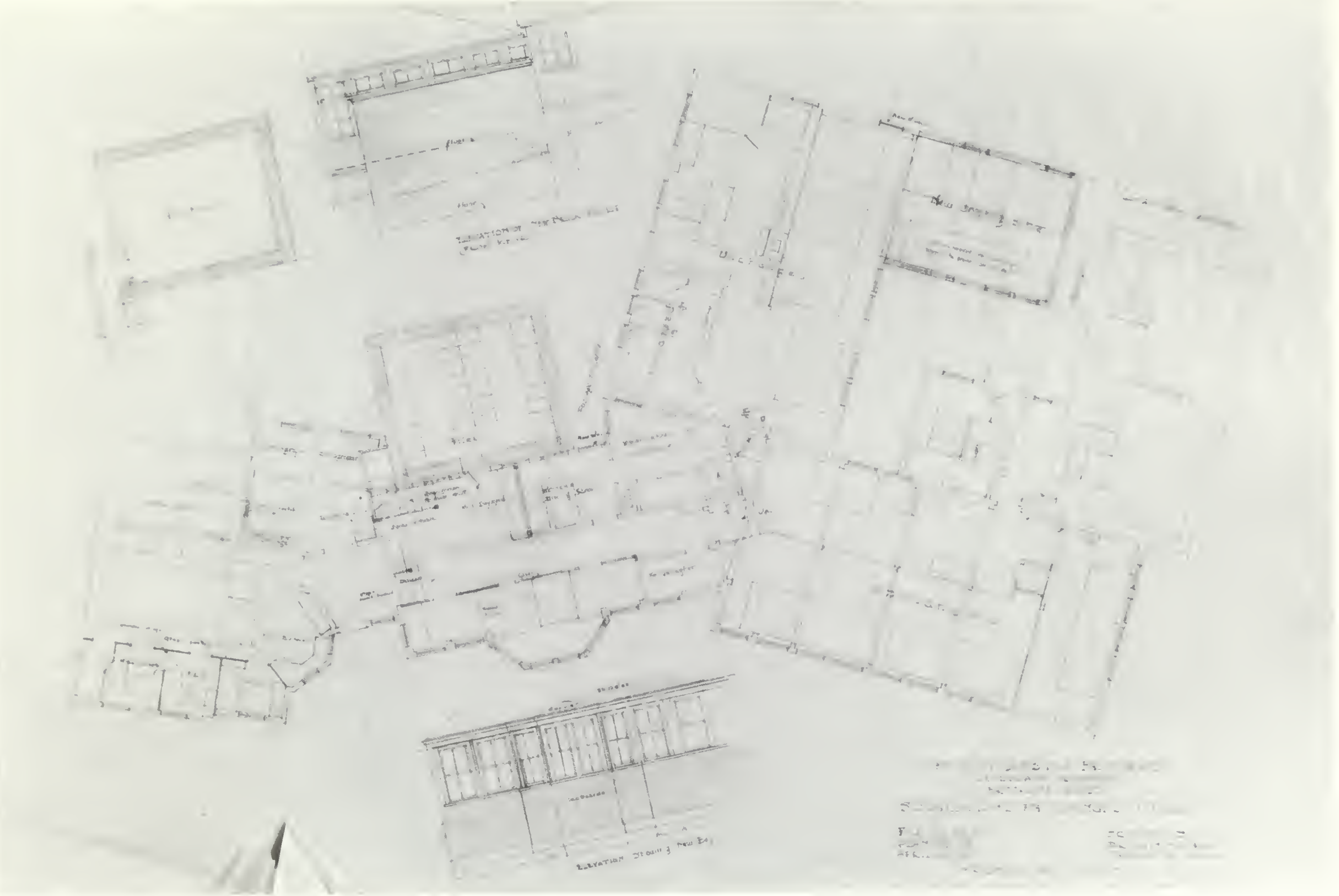


Figure 66. Drawing for proposed file-vault addition on west elevation of Clerical Department, and drafting addition on north elevation of Planting Department, April 11, 1913.

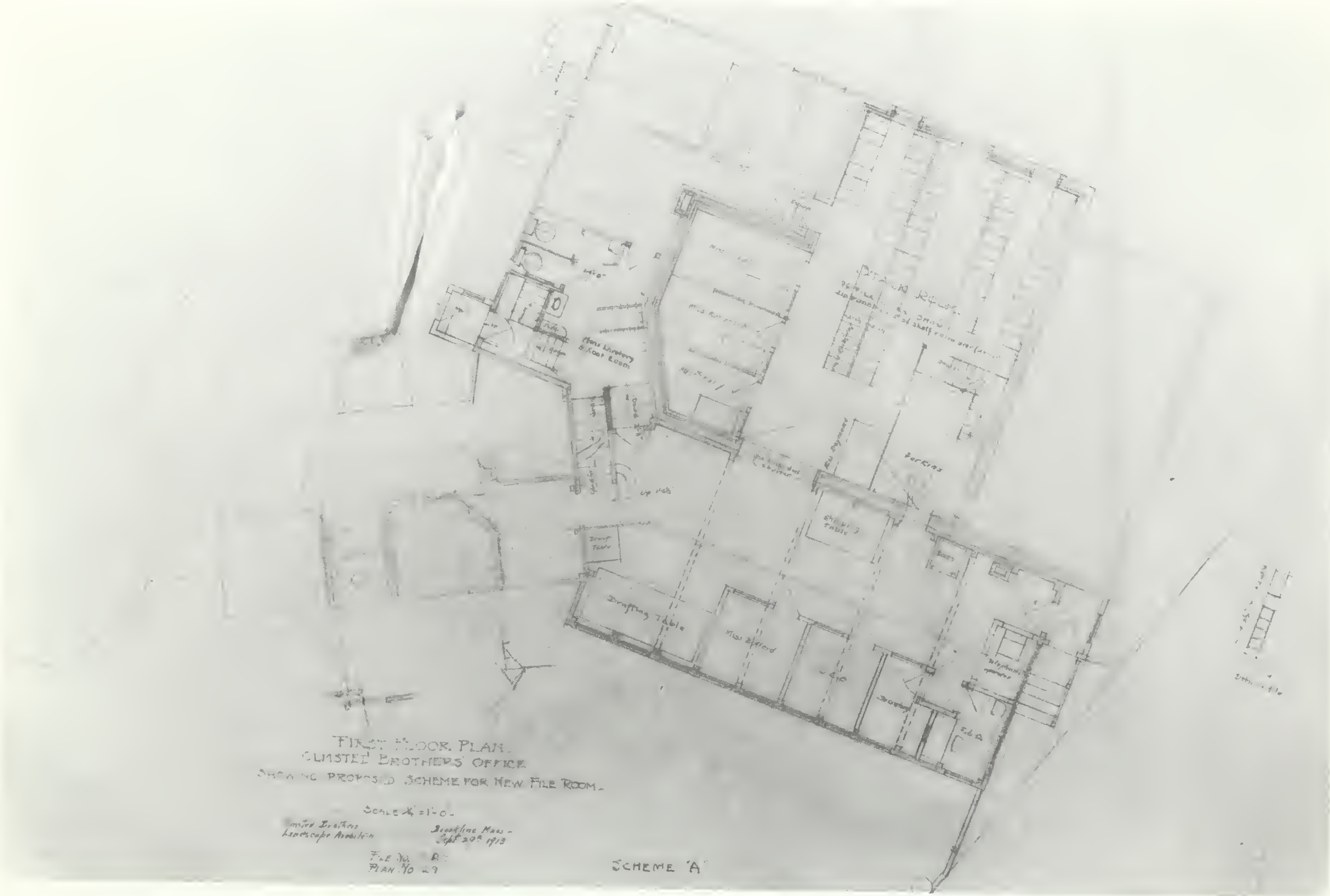


Figure 67. First-floor plan for proposed new file vault between Planting Department and Plans Vault, September 29, 1913.

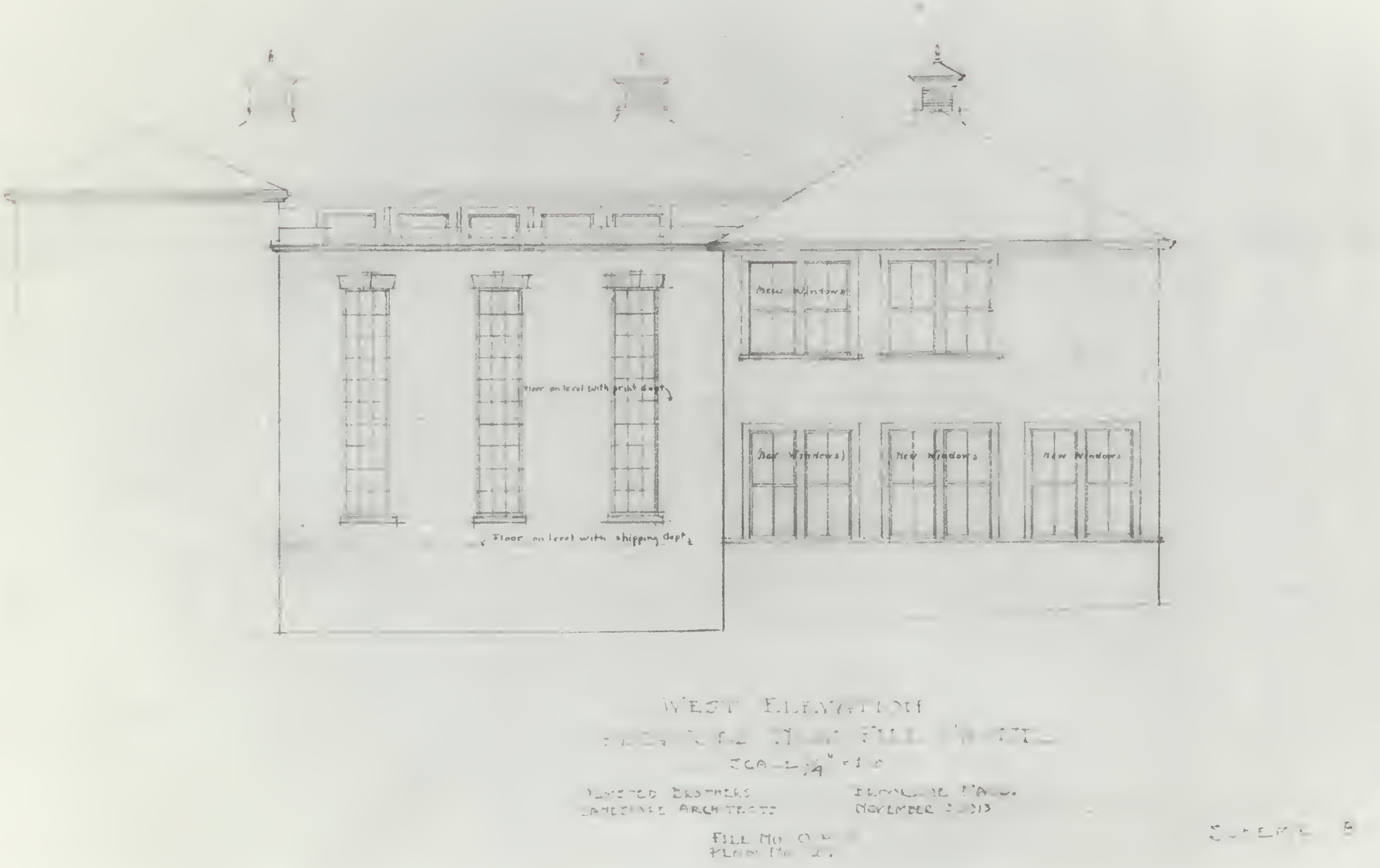


Figure 68. West-elevation drawing for proposed new file vault between Planting Department and Plans Vault, November 3, 1913.

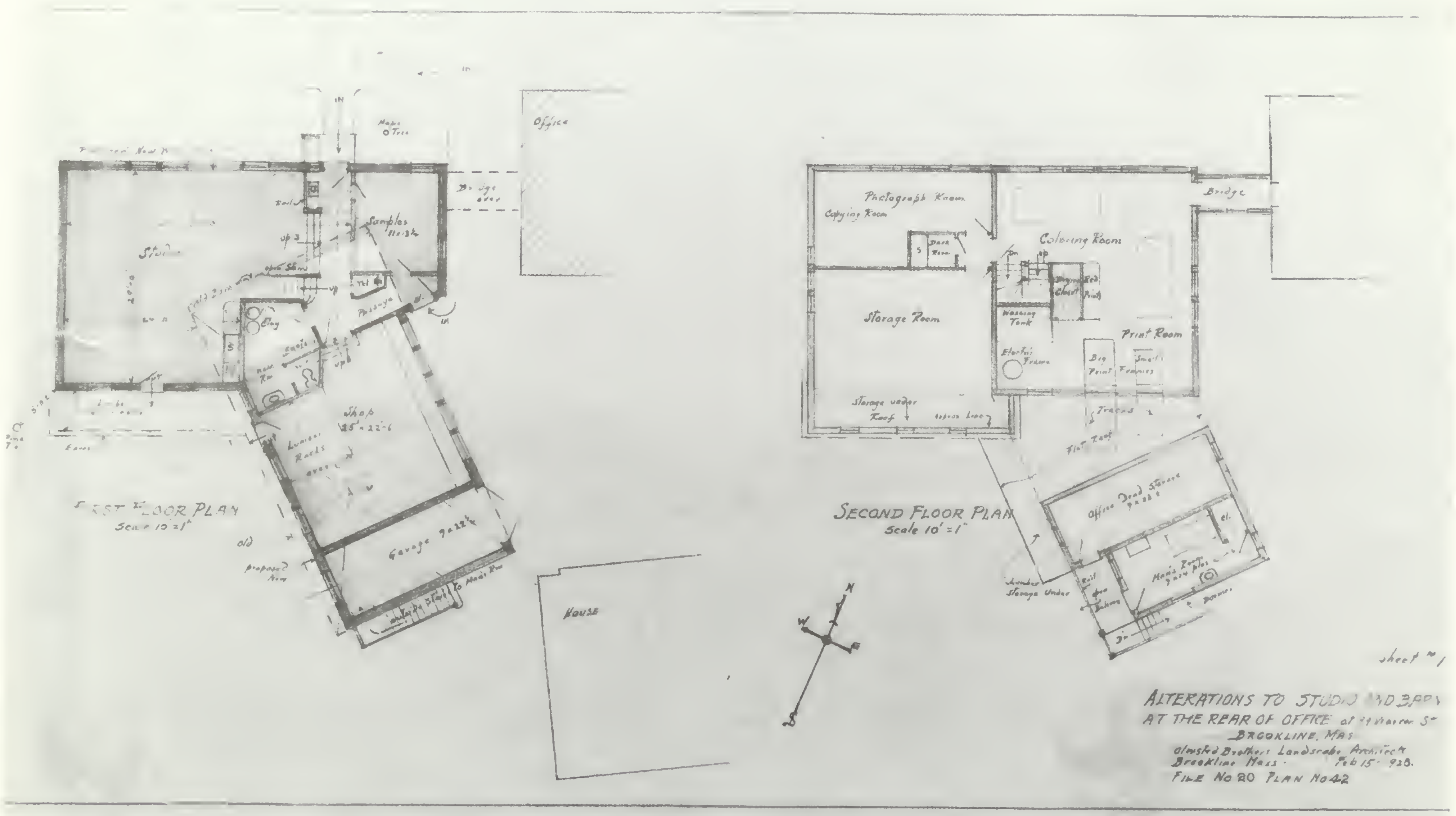


Figure 69. Floor plans for proposed office alterations to barn, Feb. 15, 1928.

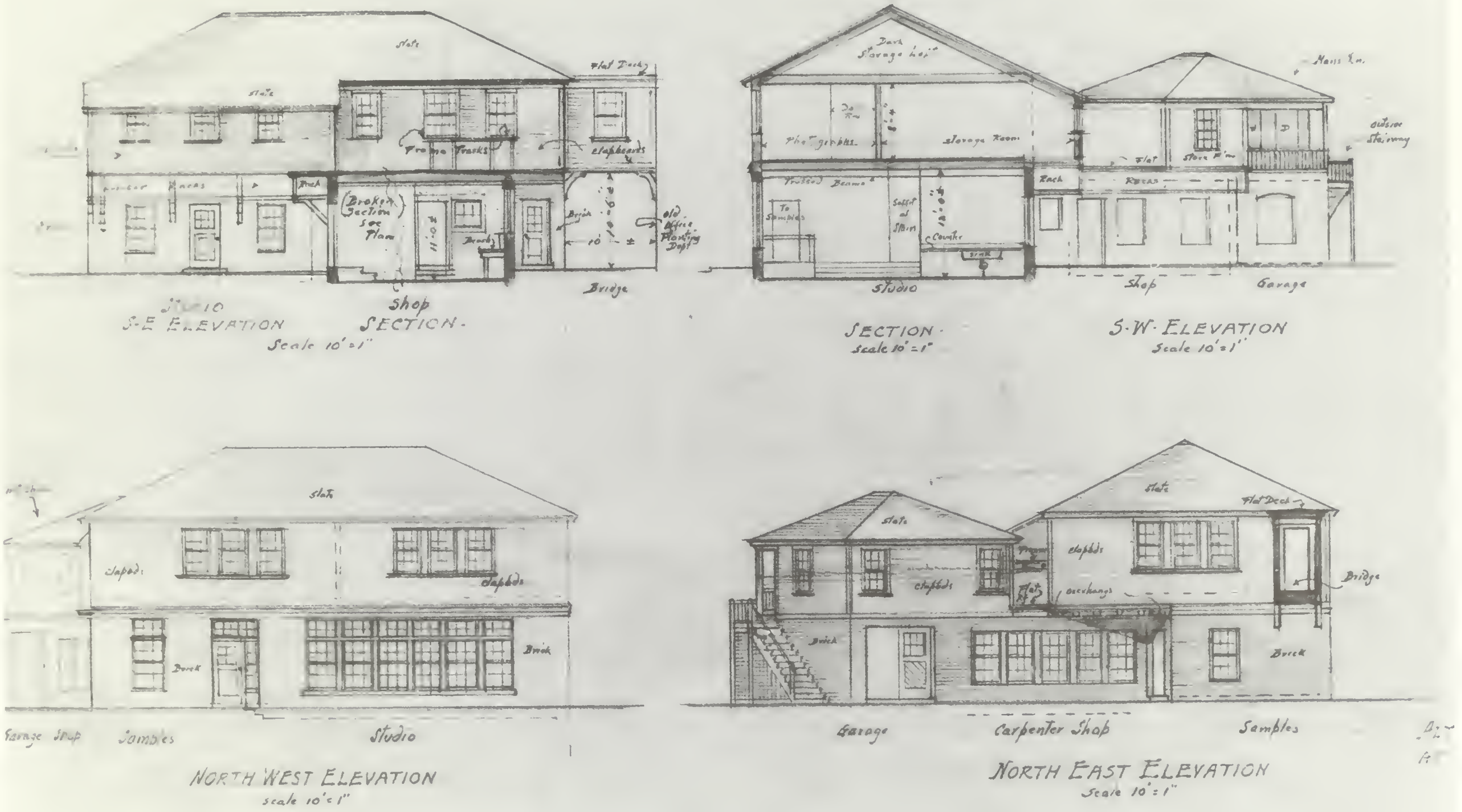


Figure 70. Elevation and section drawings for proposed office alterations to barn, probably Feb. 15, 1928.

OFFICES: FURNITURE

The building of the offices generated the need for office furniture. The archives at the Frederick Law Olmsted NHS contain a large collection of drawings for the furniture that was custom-built for the firm. A selection from these drawings is presented below. Many pieces of this furniture still remain in the offices.

Most of the furniture was constructed of wood, predominantly oak. Butternut and pine were also used. The furniture was simple and utilitarian. It was designed and built to store the firm's project records (figs. 71-72), and to organize the clerical division (figs. 73-76). Desks were also designed and built for the firm's partners (figs. 77-78).

There are no drawings for the drafting tables and stools, the other principal category of extant office furniture. The tables consist of large wooden tops set on sawhorses. This method of construction enables them to be moved about with relative ease. The stools are oak. They have four tapered legs and a circular foot rest.

In addition to the furniture drawings and extant furniture, two inventories were done of the office furniture. One is dated May 25, 1918; it is included in Appendix G, and can serve as a guide for the future furnishing of the office buildings. The other dates to 1941, after the historic period. It is available in the Olmsted Archives collection.

FIGURES FOR OFFICE FURNITURE

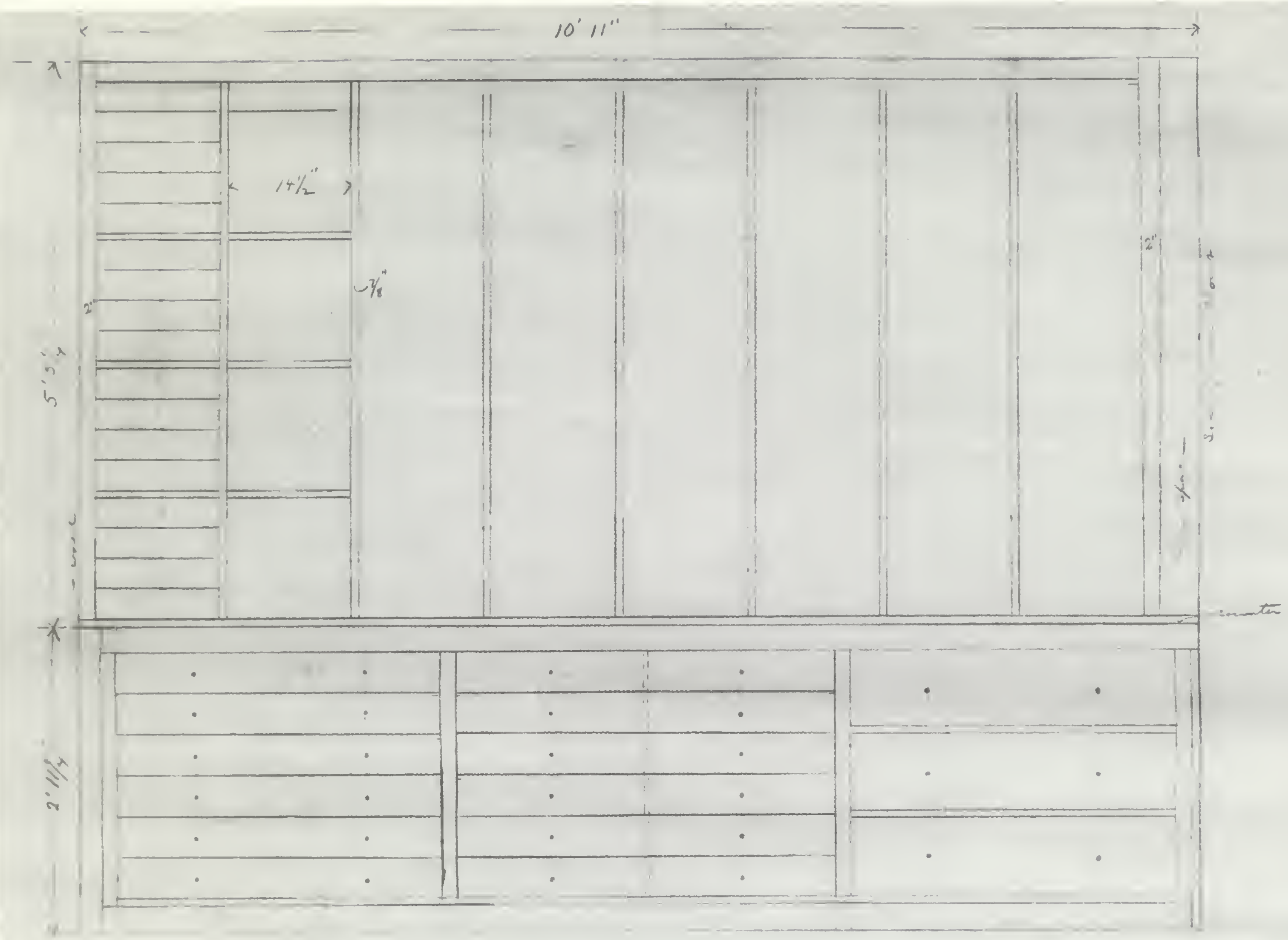


Figure 71. Portion of drawing entitled "Office Addition to Photo Room," showing cabinetry for storage of project records, 1903.

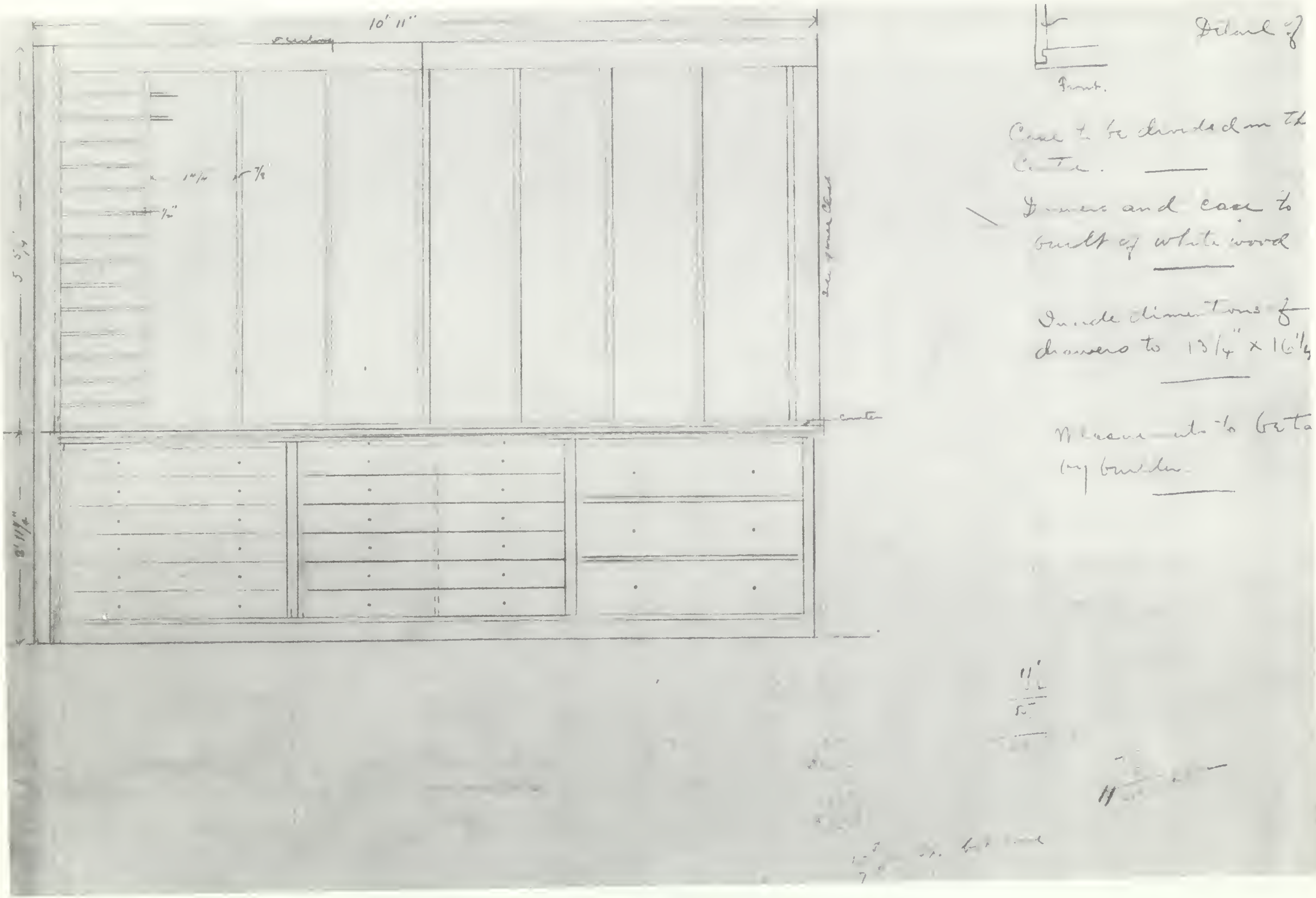

10' 11"
Overhang
5' 3¼"
8' 11¼"
1"/4
7/8
½"
Center
Detail of
Front.
Case to be divided in the Center.
Drawers and case to be built of white wood
Inside dimentions of drawers to 13¼" x 16¼"
Measurements to be taken by builder.

Figure 72. Another drawing of the cabinetry seen in figure 71.

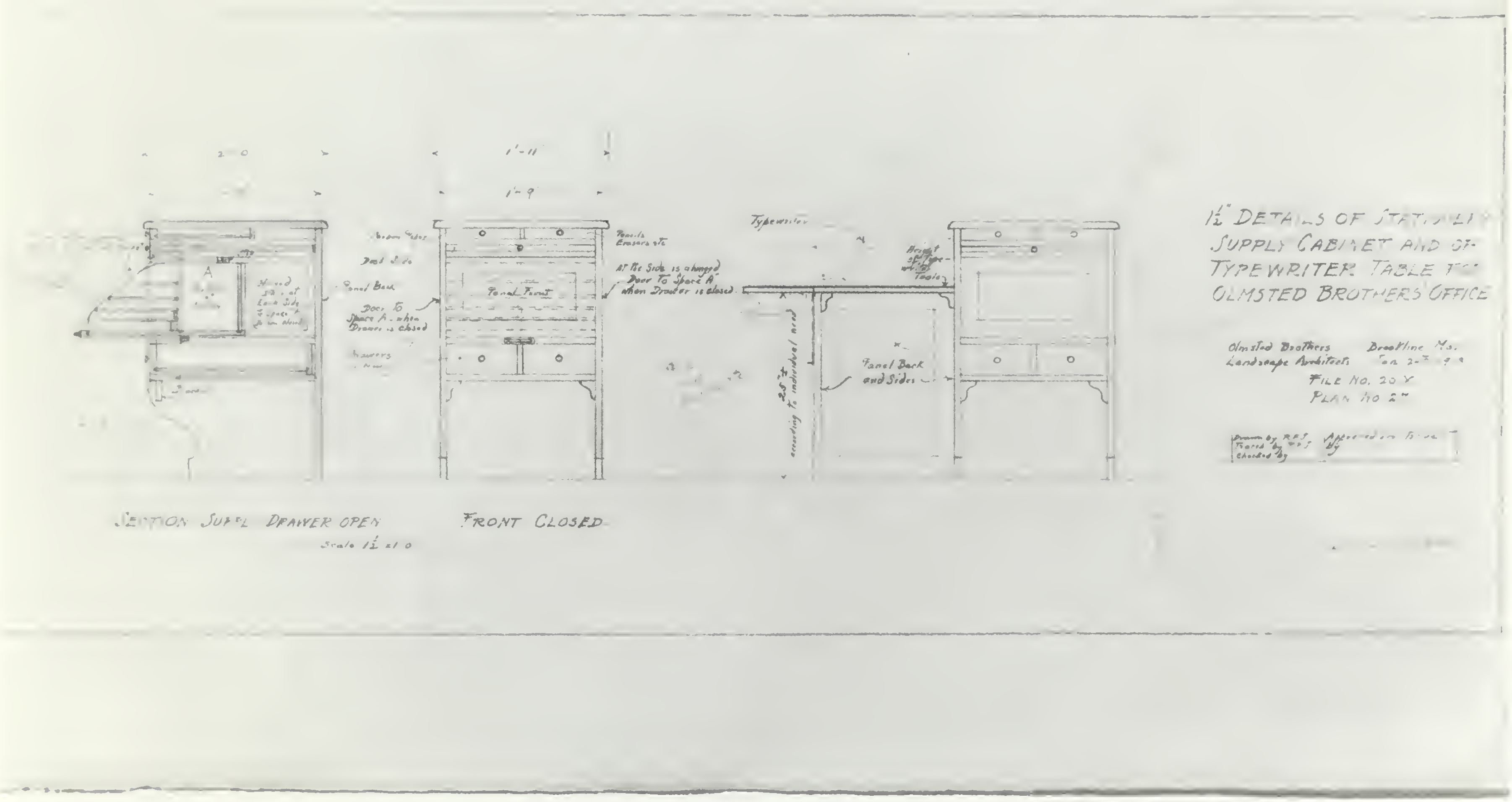

1½" DETAILS OF STATIONERY SUPPLY CABINET AND OF TYPEWRITER TABLE FOR OLMSTED BROTHERS' OFFICE
Olmsted Brothers Brookline Ms.
Landscape Architects
FILE NO. 20 Y
PLAN NO 2
Drawn by R.E.S. Approved
Traced by
Checked by
2'-0
1'-11
1'-9
A
Dust Side
Panel Back
Door to Space A when Drawer is closed
Drawers
Pencils Erasers etc
At the Side is a hinged Door to Space A when Drawer is closed.
Panel Front
Typewriter
Height of Typewriter Table
25"± according to individual need
Panel Back and Sides
SECTION SUPPL DRAWER OPEN
Scale 1½" = 1' 0
FRONT CLOSED

Figure 73. Drawing of furniture designed and built for organizing the clerical division, January 24, 1913.

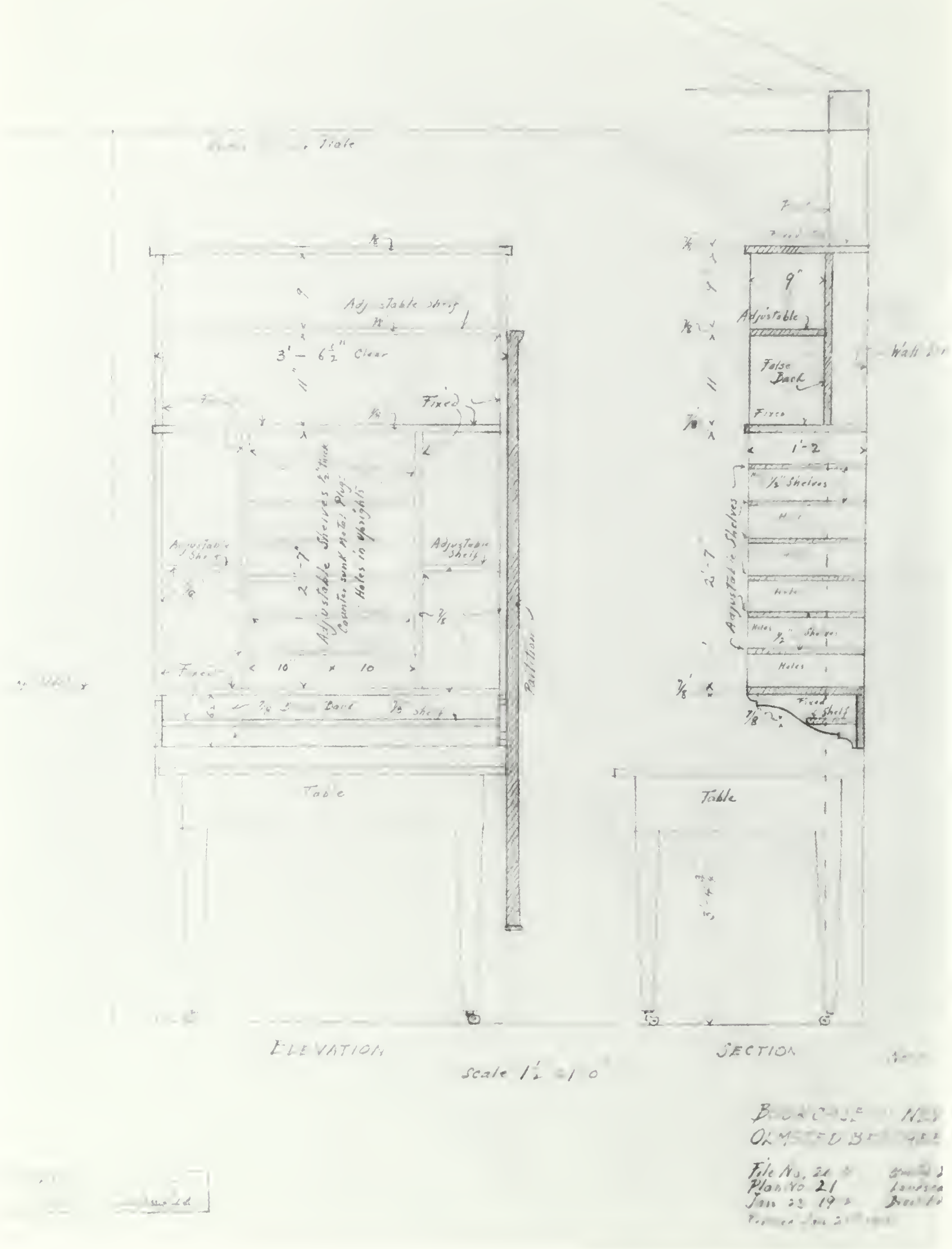


Figure 74. Drawing of bookcase, January 23 (revised January 25), 1912.

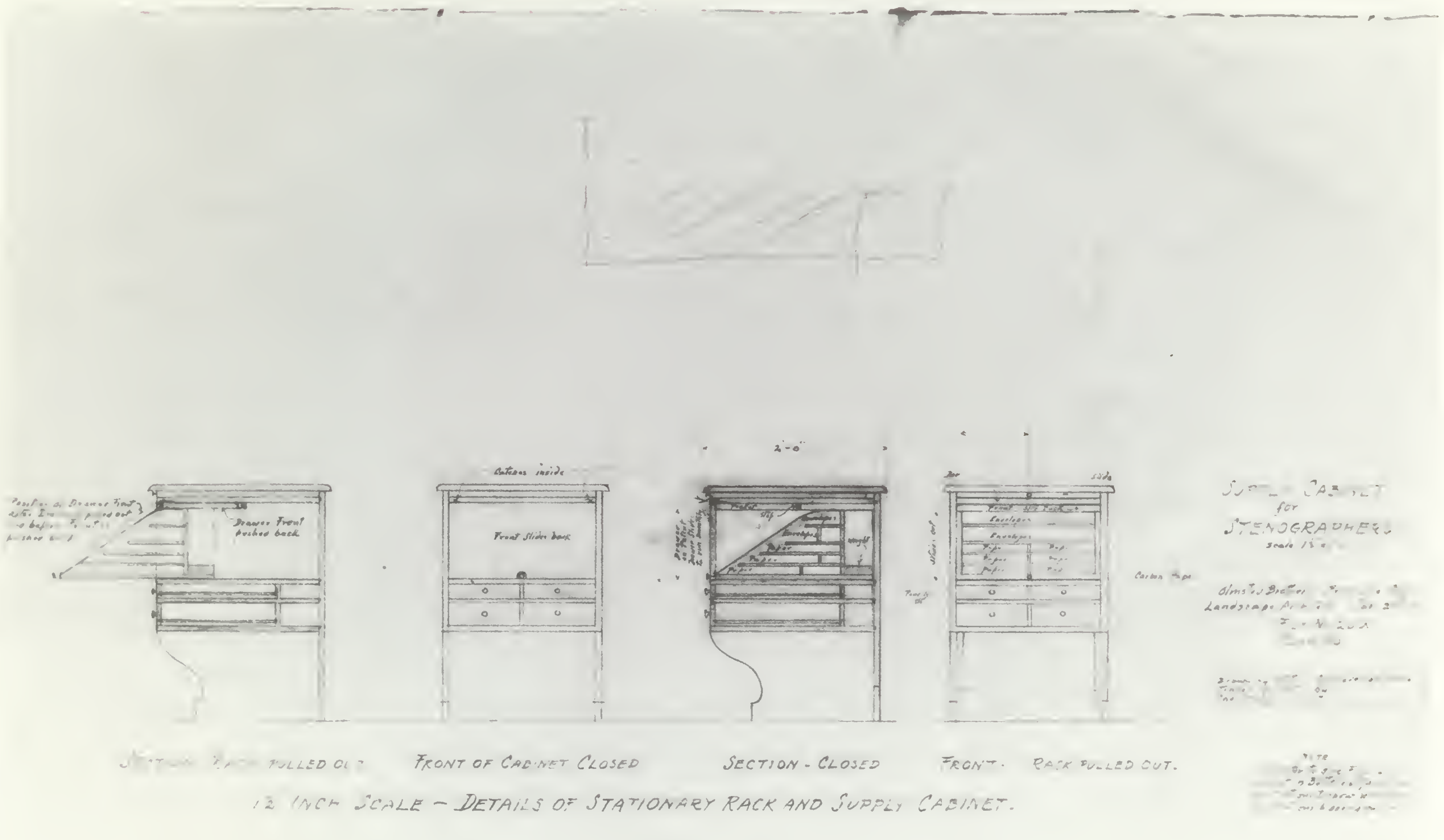


Figure 75. Drawing of "Stationary [sic] Rack and Supply Cabinet," January 24, 1913.

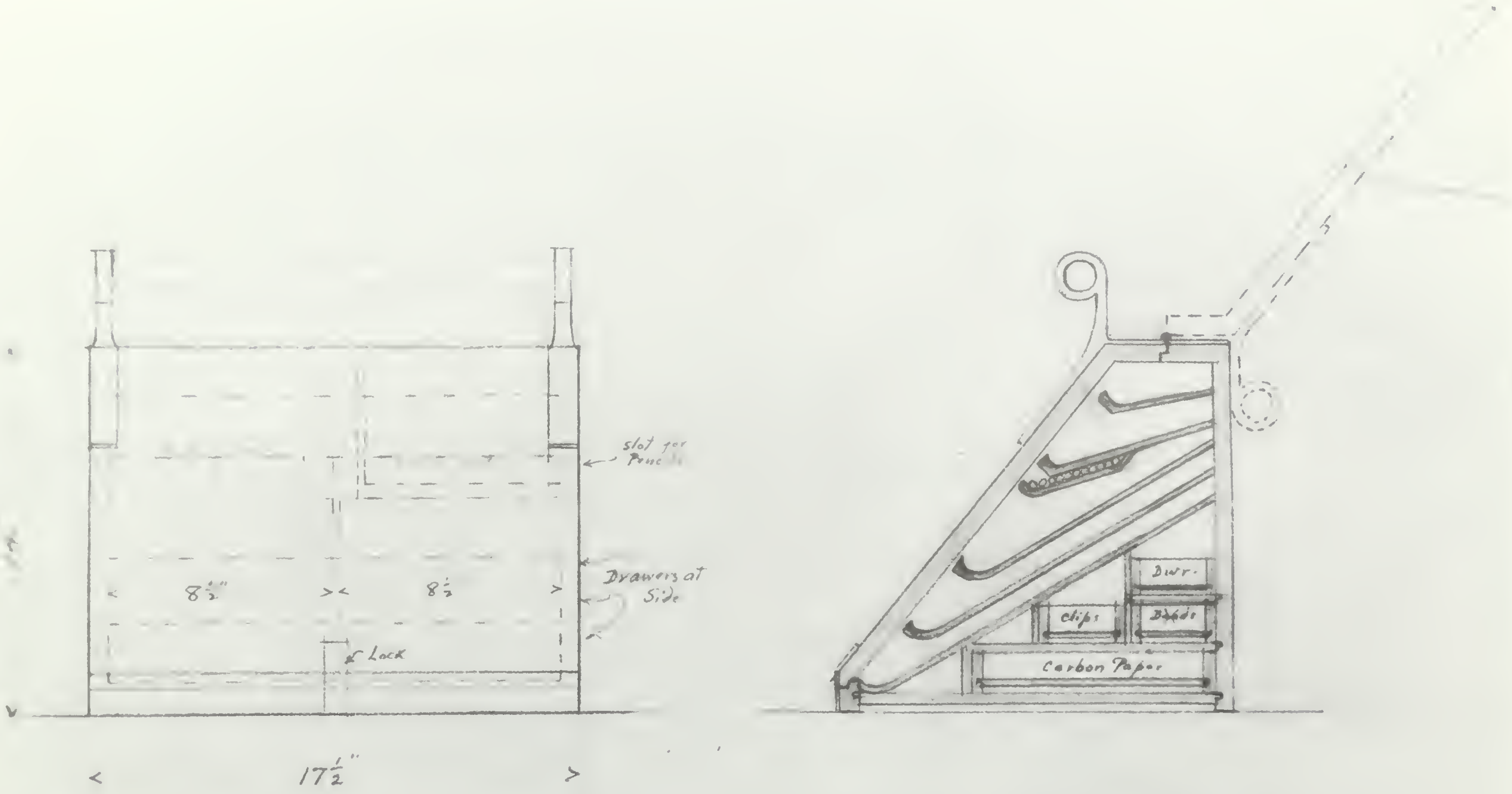


Figure 76. Detail drawing of furniture designed and built for the clerical division, circa 1913.

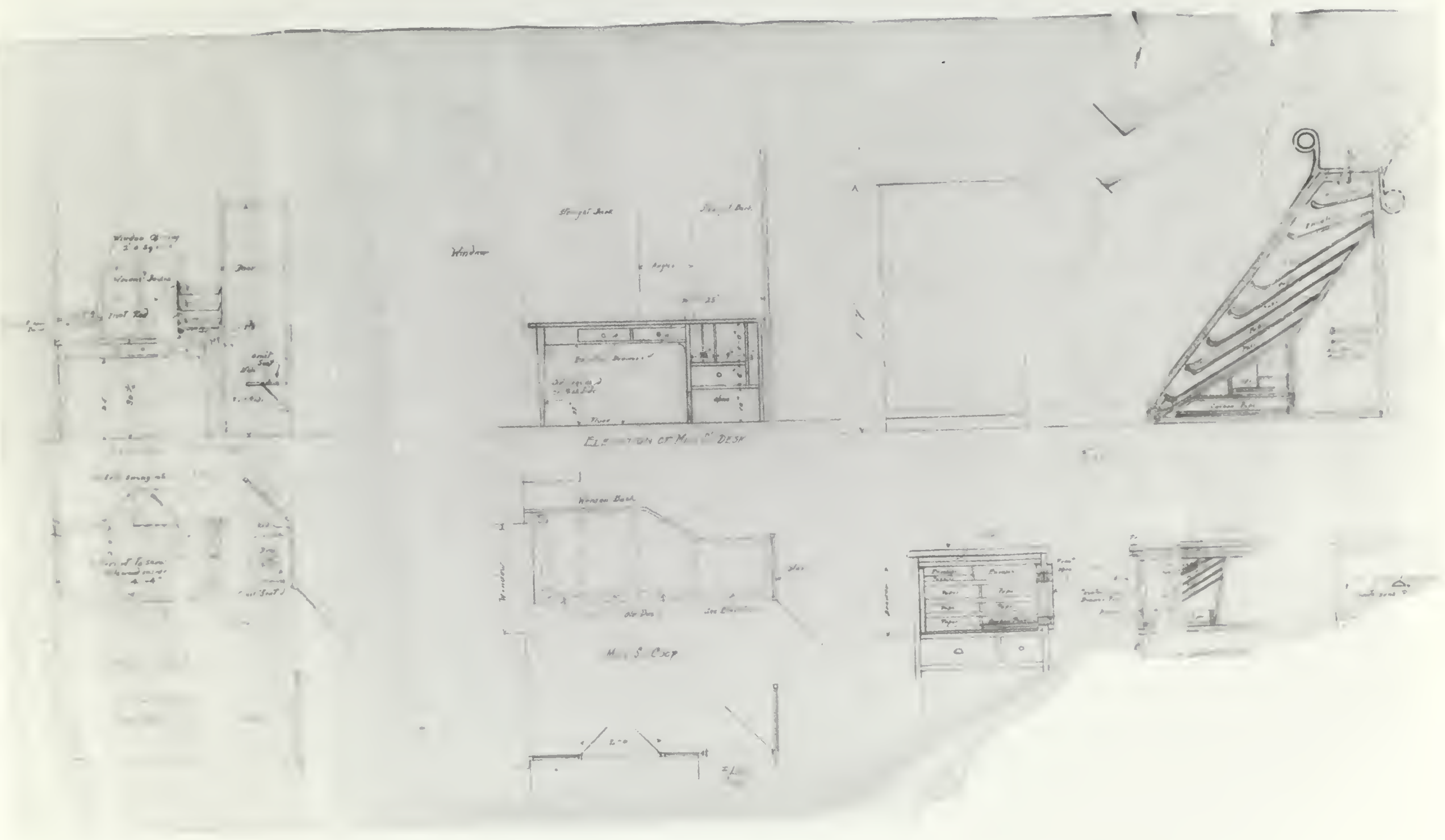


Figure 77. Drawing of furniture designed and built for Frederick Law Olmsted, Jr.,'s office, circa 1913.

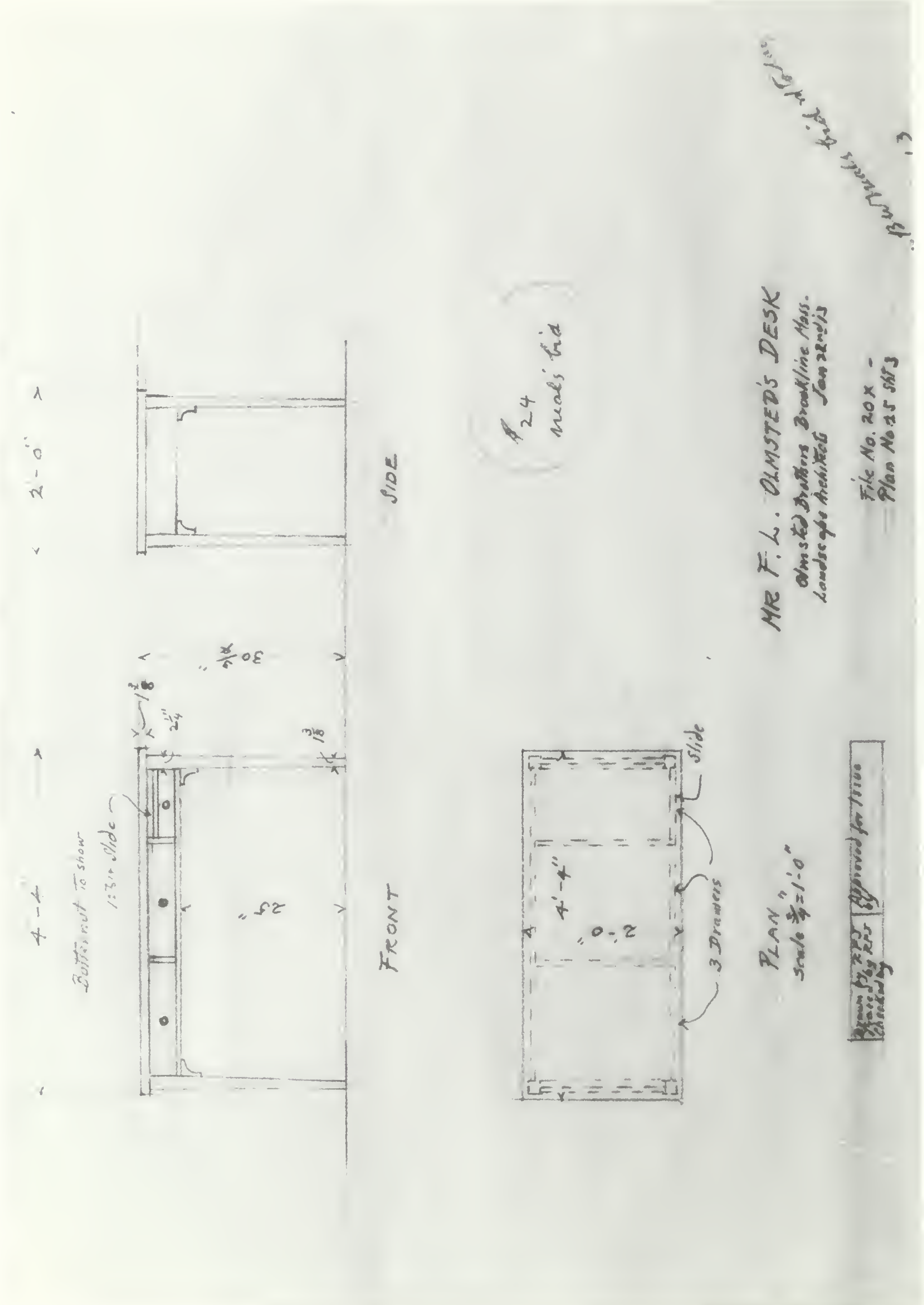


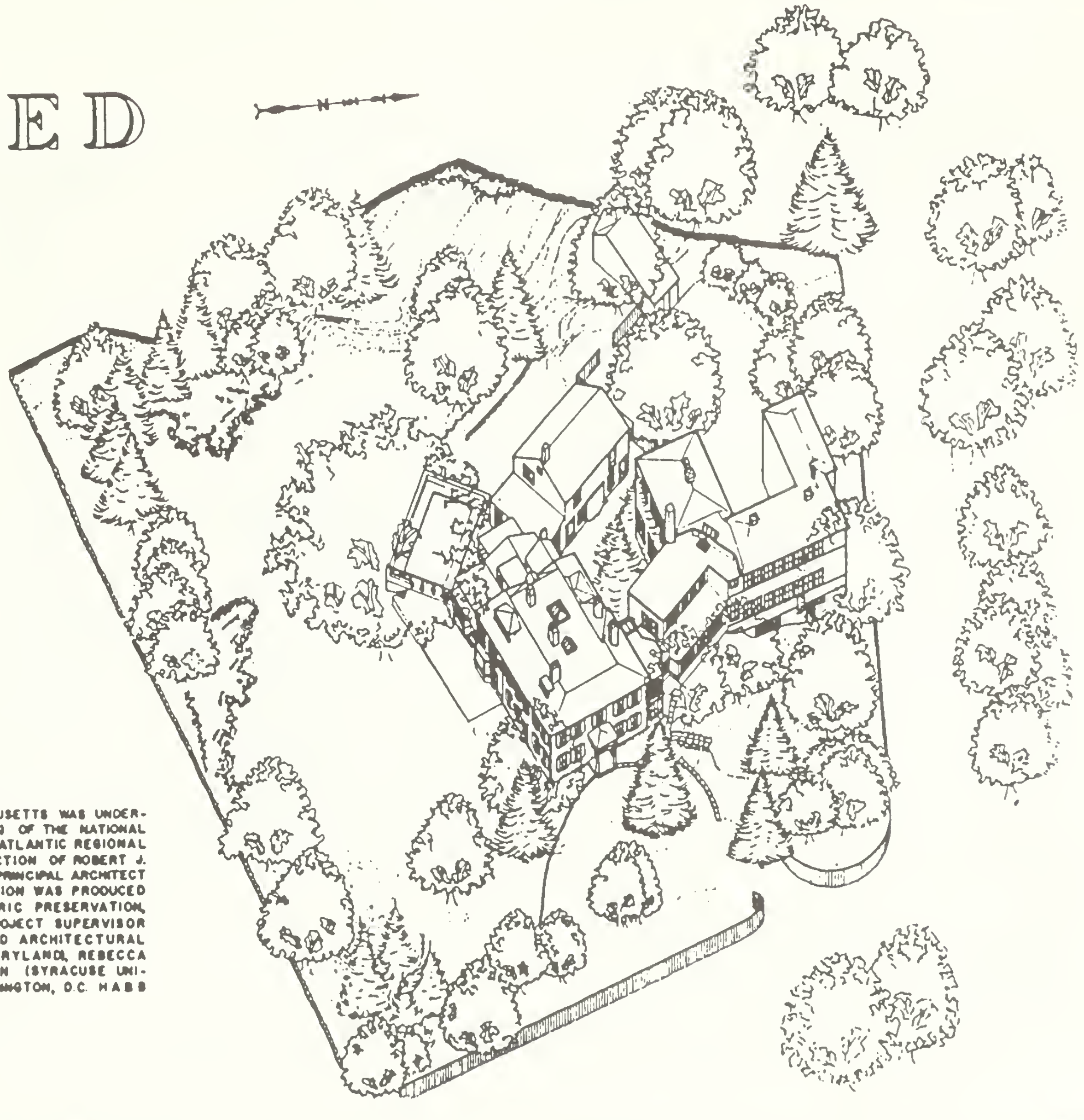
Figure 78. Drawing entitled "Mr. F.L. Olmsted's Desk," January 22, 1913.

OFFICES: APPENDICES

APPENDIX A.

Historic American Buildings Survey Drawings

FAIRSTED



THE FREDERICK LAW OLMSTED NATIONAL HISTORIC SITE, CONTAINING THE HOME AND OFFICE OF AMERICA'S PREMIER LANDSCAPE ARCHITECT, WAS ESTABLISHED IN 1979. THE HOUSE (c.1810) WAS BOUGHT BY OLMSTED IN 1883 AND REMODELED BEFORE HIS DEATH IN 1903. FREDERICK LAW OLMSTED, JR., LANDSCAPE ARCHITECT, LIVED THERE UNTIL 1936, MODIFYING THE HOUSE AND ADDING A SERVANTS' WING. BETWEEN 1963 AND 1980 OLMSTED ASSOCIATES MODERNIZED THE KITCHEN AND ADDED THE BRICK TERRACE AND SWIMMING POOL.

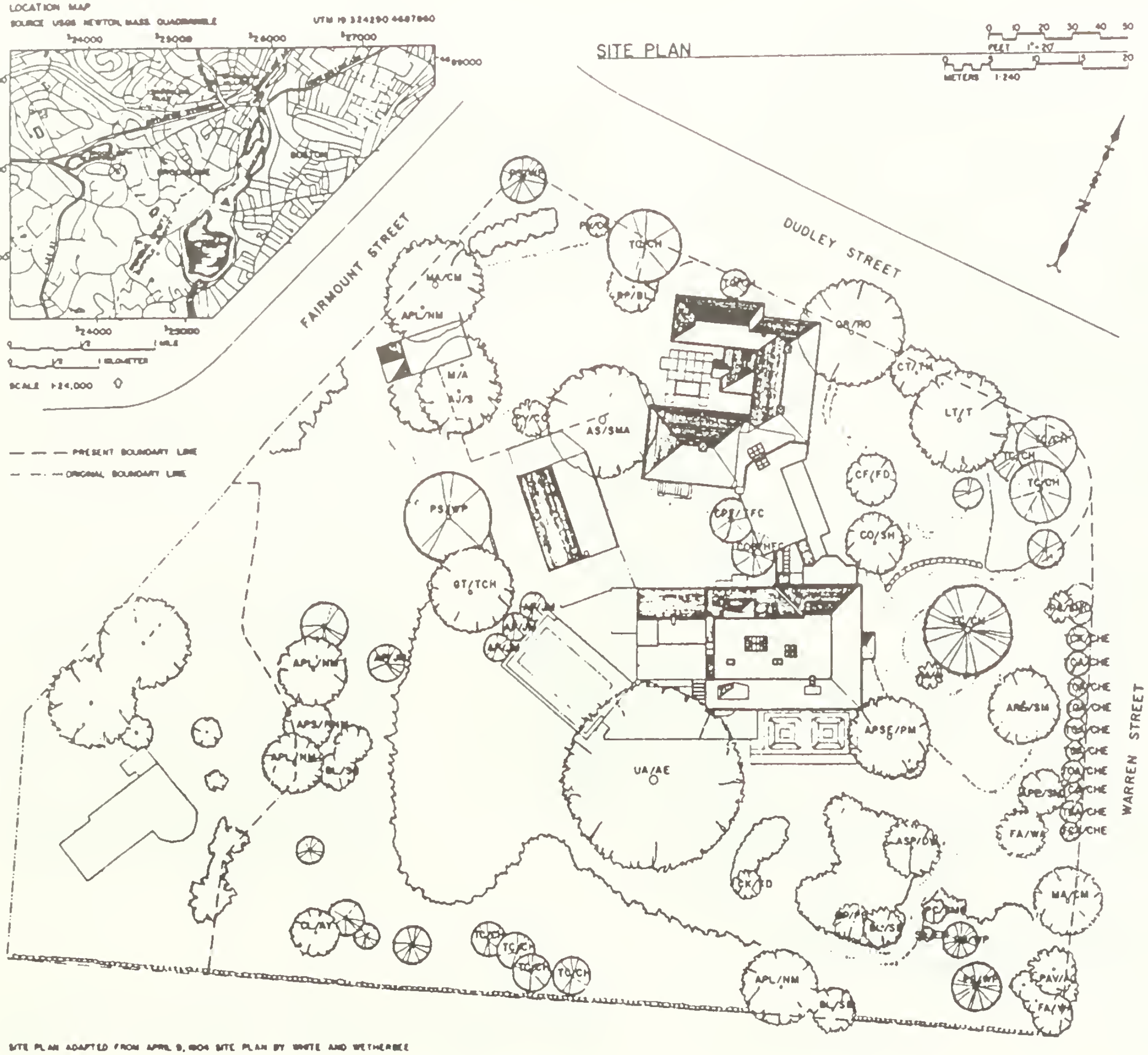
FOUR OFFICE STRUCTURES ADJOINING THE NORTH PARLOR WERE ADDED FROM 1889 TO 1925. IN 1925 THE WEST WALL OF THE 1888 CLERICAL DEPARTMENT WAS MOVED WEST ABOUT FIVE FEET AND A SECOND STORY WAS ADDED. THE ADJOINING PLANTING DEPARTMENT WAS BUILT IN 1888. IN 1911 THE 1891 NORTH DRAFTING WING ROOF WAS RAISED, AND A SECOND STORY WAS INSERTED. THE PLANS VAULT WAS BUILT IN 1901 WITH A THIRD STORY ADDED IN 1911.

THE BARN ORIGINALLY STOOD DIAGONALLY ACROSS FROM THE HOUSE BUT WAS MOVED TO ITS PRESENT LOCATION SOON AFTER 1883. THE PRE-1883 HAY BARN, CARPENTER'S SHOP ADDITION (c.1890), AND WOOD SHED (c.1910) ARE NOW WEST OF THE OFFICE COMPLEX. THE BARN WAS USED AS A STABLE, MODEL SHOP, AND SOIL TESTING LABORATORY AT VARIOUS TIMES.

THE DOCUMENTATION OF "FAIRSTED" IN BROOKLINE, MASSACHUSETTS WAS UNDERTAKEN BY THE HISTORIC AMERICAN BUILDINGS SURVEY (HABS) OF THE NATIONAL PARK SERVICE (NPS) IN COOPERATION WITH THE NPS NORTH ATLANTIC REGIONAL OFFICE. THE PROJECT WAS CONDUCTED UNDER THE DIRECTION OF ROBERT J. KAPSCH, CHIEF OF HABS/HAER, AND KENNETH L. ANDERSON, PRINCIPAL ARCHITECT OF HABS, DURING THE SUMMER OF 1982. THE DOCUMENTATION WAS PRODUCED IN CONSULTATION WITH E. BLAINE CLIVER, CHIEF, HISTORIC PRESERVATION, NORTH ATLANTIC HISTORIC PRESERVATION CENTER, BY PROJECT SUPERVISOR STEVEN M. WIESENTHAL (UNIVERSITY OF MARYLAND) AND ARCHITECTURAL TECHNICIANS WILLIAM NEUDORFER (UNIVERSITY OF MARYLAND), REBECCA TRUMBULL (UNIVERSITY OF VIRGINIA) AND DANIEL P. WHALEN (SYRACUSE UNIVERSITY). THE PROJECT WAS COMPLETED IN THE WASHINGTON, D.C. HABS OFFICE BY REBECCA TRUMBULL.

FAIRSTED (FREDERICK LAW OLMSTED NHS)

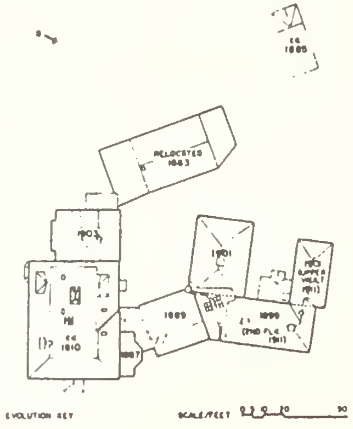
SITE PLAN



SITE PLAN ADAPTED FROM APRIL 9, 1904 SITE PLAN BY WHITE AND WETHERBEE

INDEX TO TREES

KEY	BOTANICAL NAME	COMMON NAME
AP/JM	ACER PALMATUM	JAPANESE MAPLE
APE/SM	ACER PENSYLVANICUM	STRIPED MAPLE
APL/NM	ACER PLATANOIDES	NORWAY MAPLE
APS/RNM	ACER PLATANOIDES 'SCHWEDLER'	RED NORWAY MAPLE
APSE/PM	ACER PSEUDOPLATANUS	PLANETREE MAPLE
AS/SMA	ACER SACCHARUM	SUGAR MAPLE
AJ/S	ALBIZIA JULIBRISSIN	SILKTREE
BL/SB	BETULA LENTA	SWEET BIRCH
BP/PB	BETULA PAPYRIFERA	PAPER BIRCH
CO/SH	CARYA OVATA	SHAGBARK HICKORY
COB/HFC	CHAMAECYPARIS OBTUSA	HINOKI FALSE CYPRESS
CPF/TFC	CHAMAECYPARIS PISIFERA 'FILIFERA'	THREAD-LEAF FALSE CYPRESS
CL/AY	CLADRASTIS LUTEA	AMERICAN YELLOWWOOD
CF/FD	CORNUS FLORIDA	FLOWERING DOGWOOD
CK/KD	CORNUS KOUSA	KOUSA DOGWOOD
CT/TH	CRATAEGUS 'TOBA'	TOBA HAWTHORN
FA/WA	FRAXINUS AMERICANA	WHITE ASH
GT/TCH	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS COMMON HONEY LOCUST
LT/T	LIRIODENDRON TULIPFERA	TULIPTREE
MA/CM	MAGNOLIA ACUMINATA	CUCUMBERTREE MAGNOLIA
M/A	MALUS (SPECIES)	APPLE
PA/AC	PHELLODENDRON AMURENSE	AMUR CORKTREE
PC/SMO	PHILADELPHUS CORONARIUS	SWEET MOCKORANGE
PS/WP	PINUS STROBUS	WHITE PINE
PAV/SC	PRUNUS AVIUM	SWEET CHERRY
PV/CC	PRUNUS VIRGINIANA	COMMON CHOKECHERRY
QR/RO	QUERCUS RUBRA	RED OAK
RP/BL	ROBINIA PSEUDOACACIA	BLACK LOCUST
SA/EM	SORBUS AUCUPARIA	EUROPEAN MOUNTAINASH
TC/CH	TSUGA CANADENSIS	CANADIAN HEMLOCK
TCA/CHE	TSUGA CAROLINIANA	CAROLINA HEMLOCK
UA/AE	ULMUS AMERICANA	AMERICAN ELM

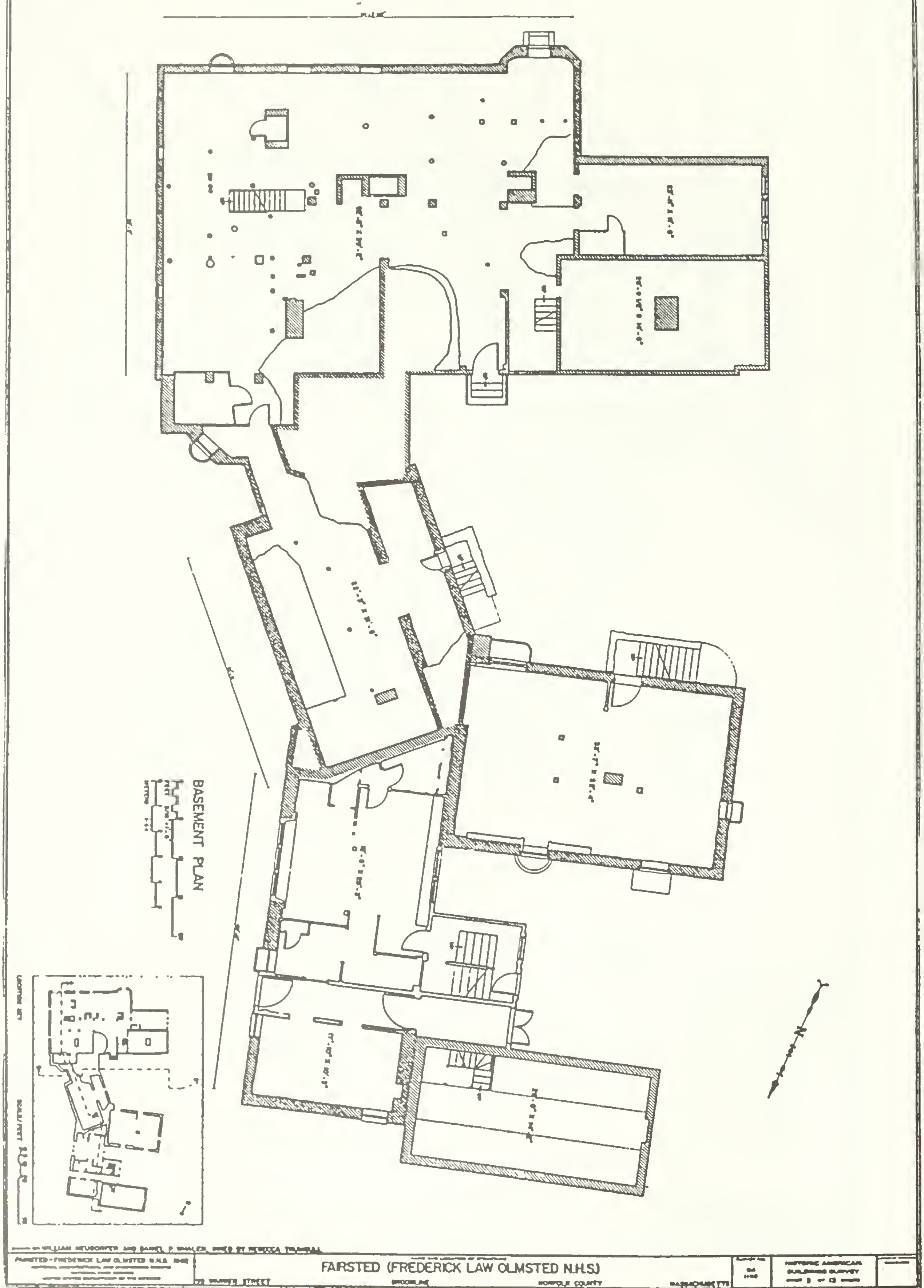


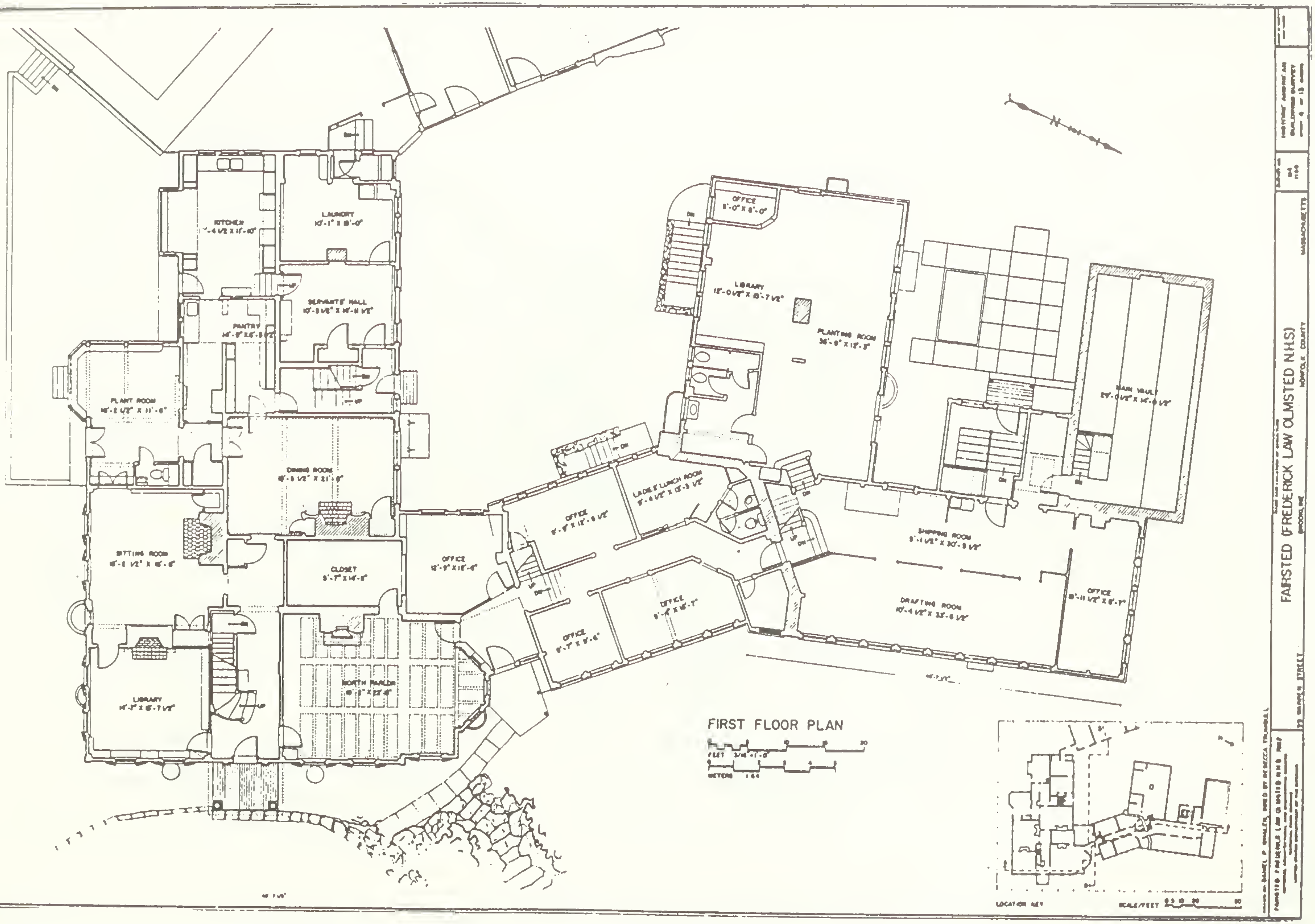
DRAWN BY WILLIAM NEUDORFER AND REBECCA TRUMBULL, INKED BY REBECCA TRUMBULL

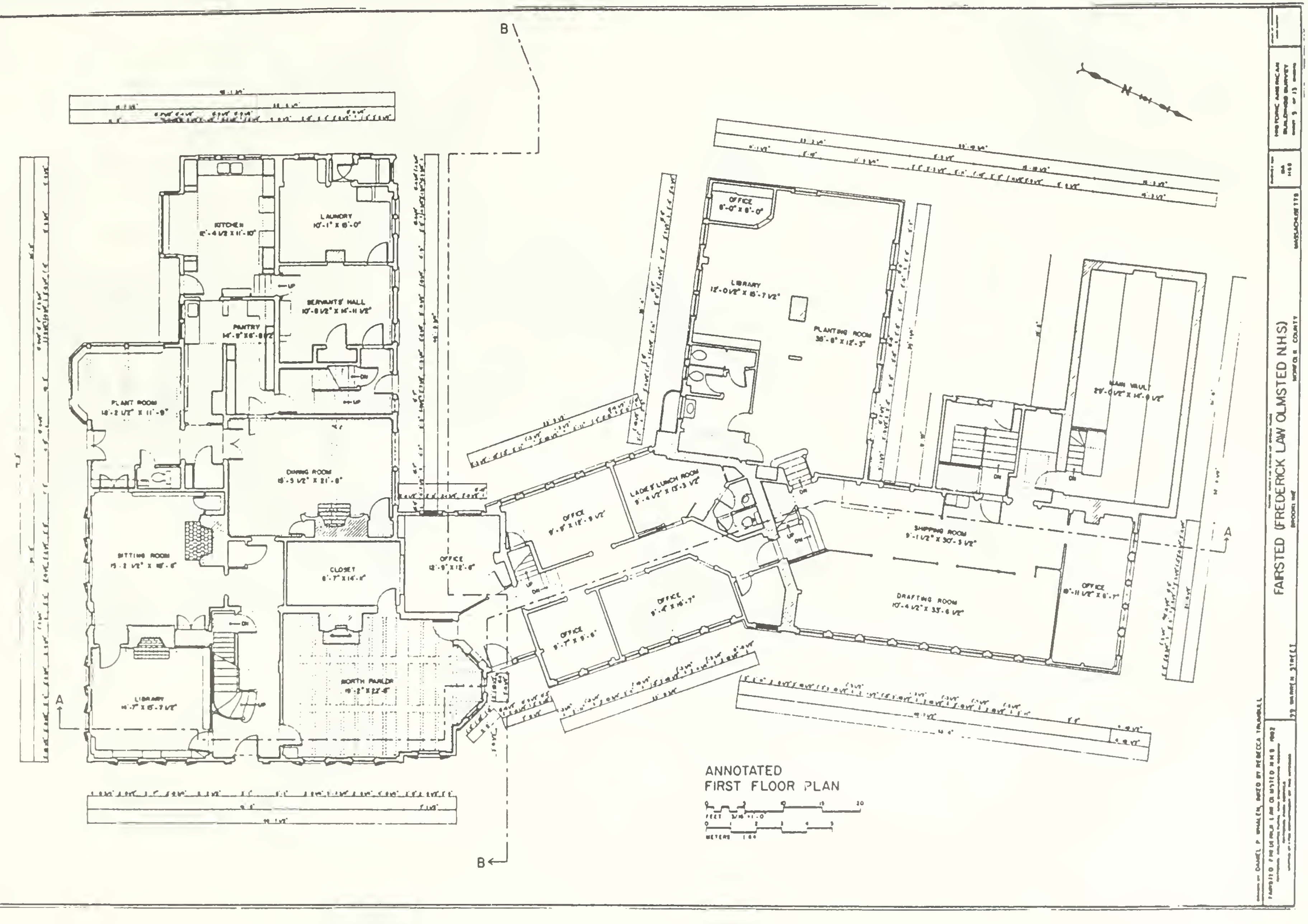
FAIRSTED (FREDERICK LAW OLMSTED NHS)

99 WARREN STREET BROOKLINE NORFOLK COUNTY MASSACHUSETTS

HISTORIC AMERICAN BUILDINGS SURVEY


BASEMENT PLAN
N
FAIRSTED (FREDERICK LAW OLMSTED N.H.S)
BROOKLINE
NORFOLK COUNTY
MASSACHUSETTS
HISTORIC AMERICAN BUILDINGS SURVEY


KITCHEN
-4 1/2" X 11'-10"
LAUNDRY
10'-1" X 18'-0"
SERVANTS' HALL
10'-5 1/2" X 14'-11 1/2"
PANTRY
14'-8" X 6'-5 1/2"
PLANT ROOM
16'-2 1/2" X 11'-6"
DINING ROOM
16'-5 1/2" X 21'-9"
SITTING ROOM
16'-2 1/2" X 16'-6"
CLOSET
5'-7" X 14'-8"
LIBRARY
14'-7" X 16'-7 1/2"
NORTH PARLOR
16'-2" X 22'-6"
OFFICE
12'-9" X 12'-6"
OFFICE
9'-9" X 12'-9 1/2"
LADIES' LUNCH ROOM
9'-4 1/2" X 13'-3 1/2"
OFFICE
9'-7" X 9'-6"
OFFICE
9'-4" X 16'-7"
OFFICE
9'-0" X 6'-0"
LIBRARY
12'-0 1/2" X 10'-7 1/2"
PLANTING ROOM
36'-9" X 12'-3"
MAIN VAULT
27'-0 1/2" X 14'-0 1/2"
SHIPPING ROOM
9'-1 1/2" X 30'-9 1/2"
DRAFTING ROOM
10'-4 1/2" X 33'-6 1/2"
OFFICE
10'-11 1/2" X 6'-7"
UP
DN
N
FIRST FLOOR PLAN
FEET 3/16"=1'-0"
0 10 20 30
METERS 1:64
LOCATION KEY
SCALE/FEET
FAIRSTED (FREDERICK LAW OLMSTED NHS)
99 WARREN STREET
BROOKLINE
NORFOLK COUNTY
MASSACHUSETTS
HISTORIC AMERICAN BUILDINGS SURVEY



ANNOTATED
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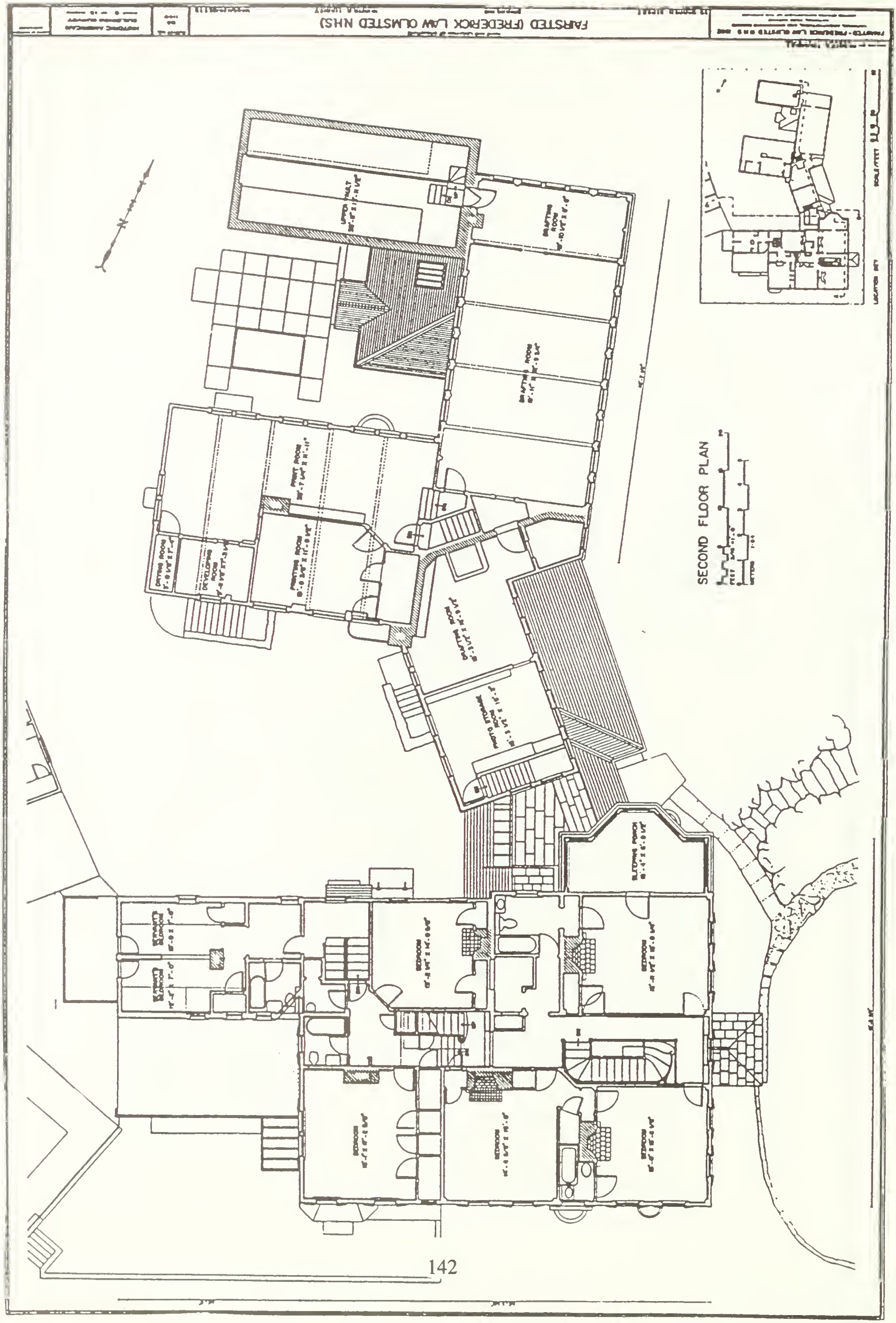
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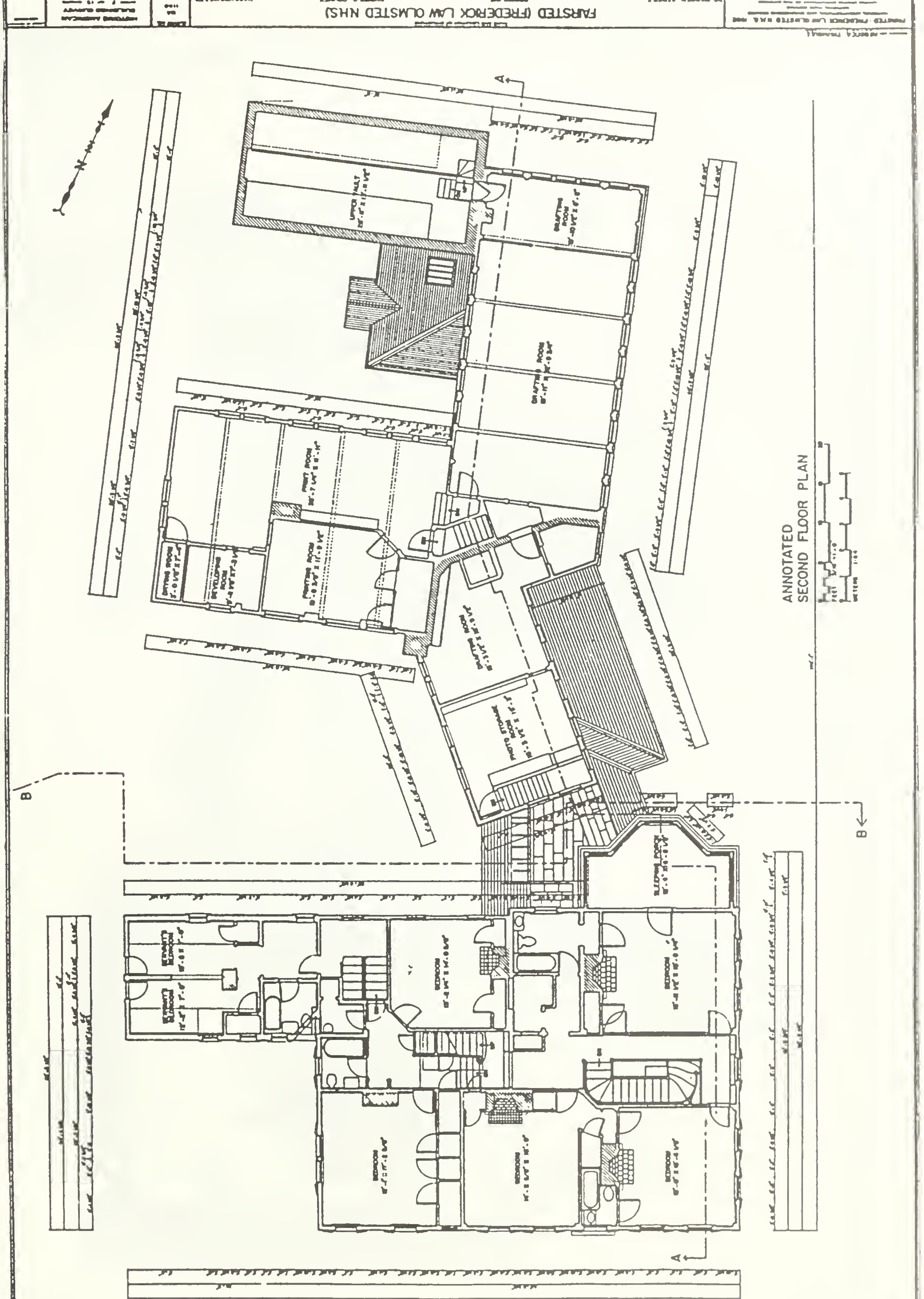
PRINT ROOM
PRINTING ROOM
DEVELOPING ROOM
DRYING ROOM
PHOTO STORAGE ROOM
SLEEPING PORCH
BEDROOM
SERVANT'S BEDROOM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DEVELOPING ROOM
DRYING ROOM
PHOTO STORAGE ROOM
SLEEPING PORCH
SERVANT'S BEDROOM
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A
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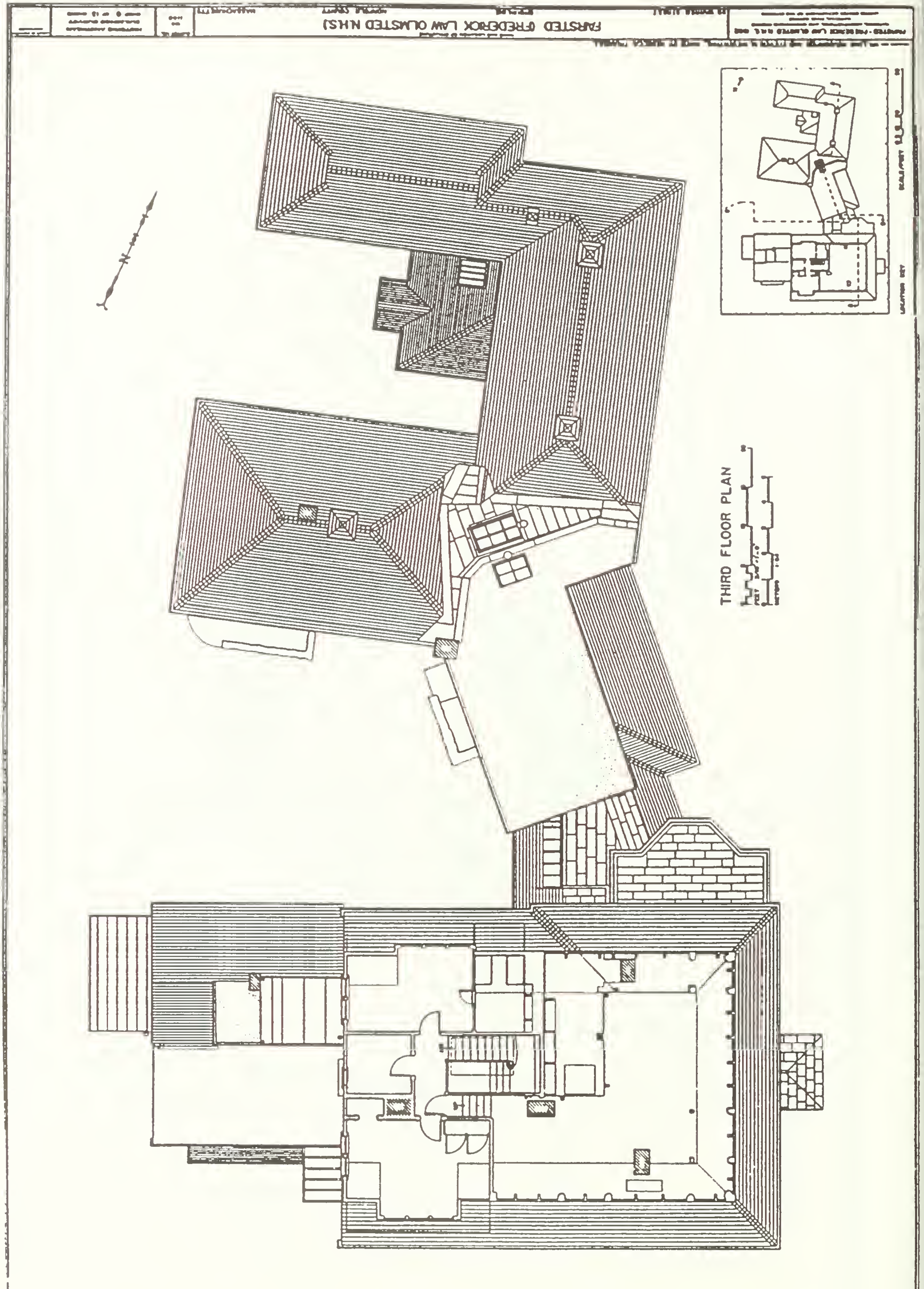
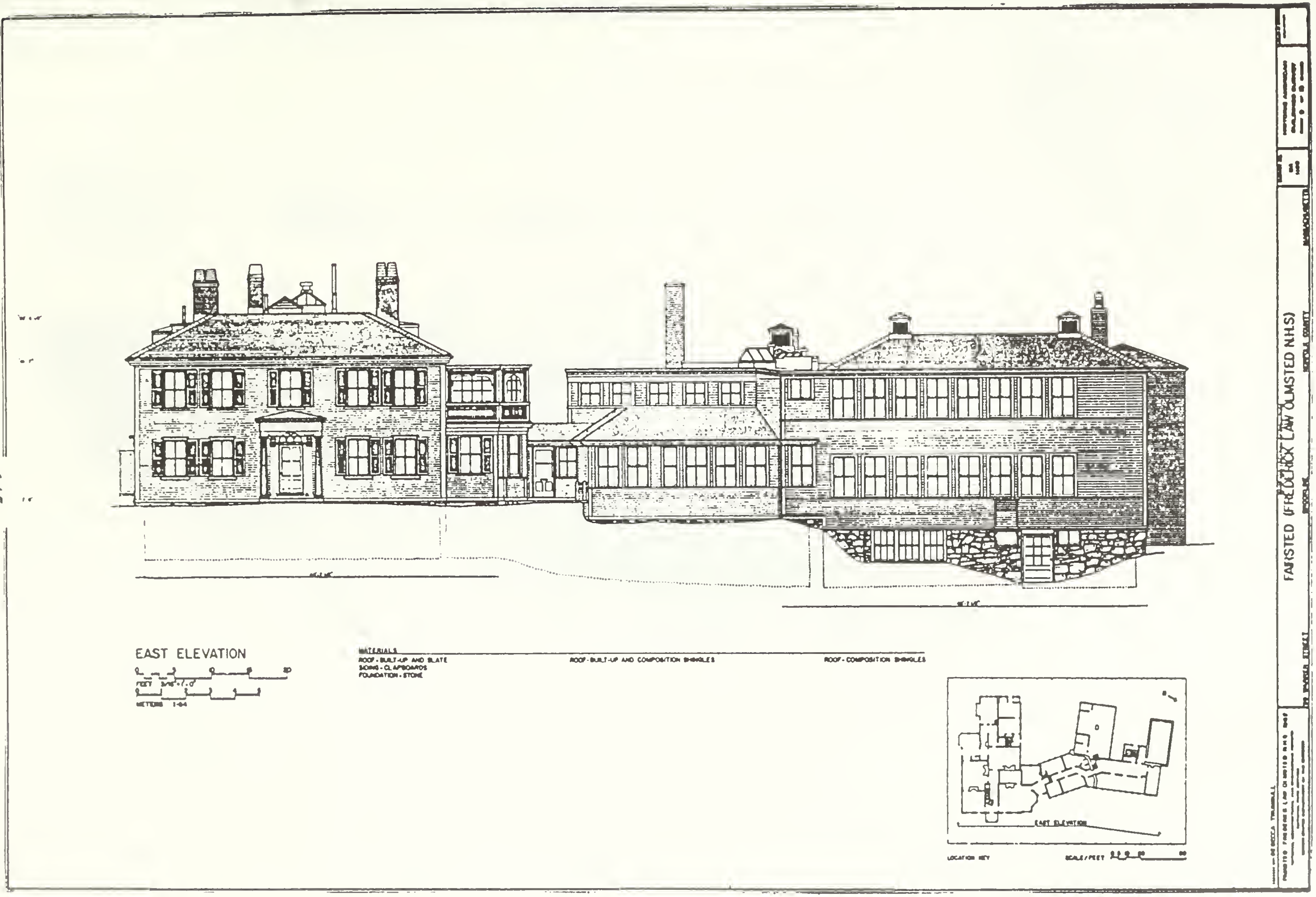


THIRD FLOOR PLAN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METERS 1:64
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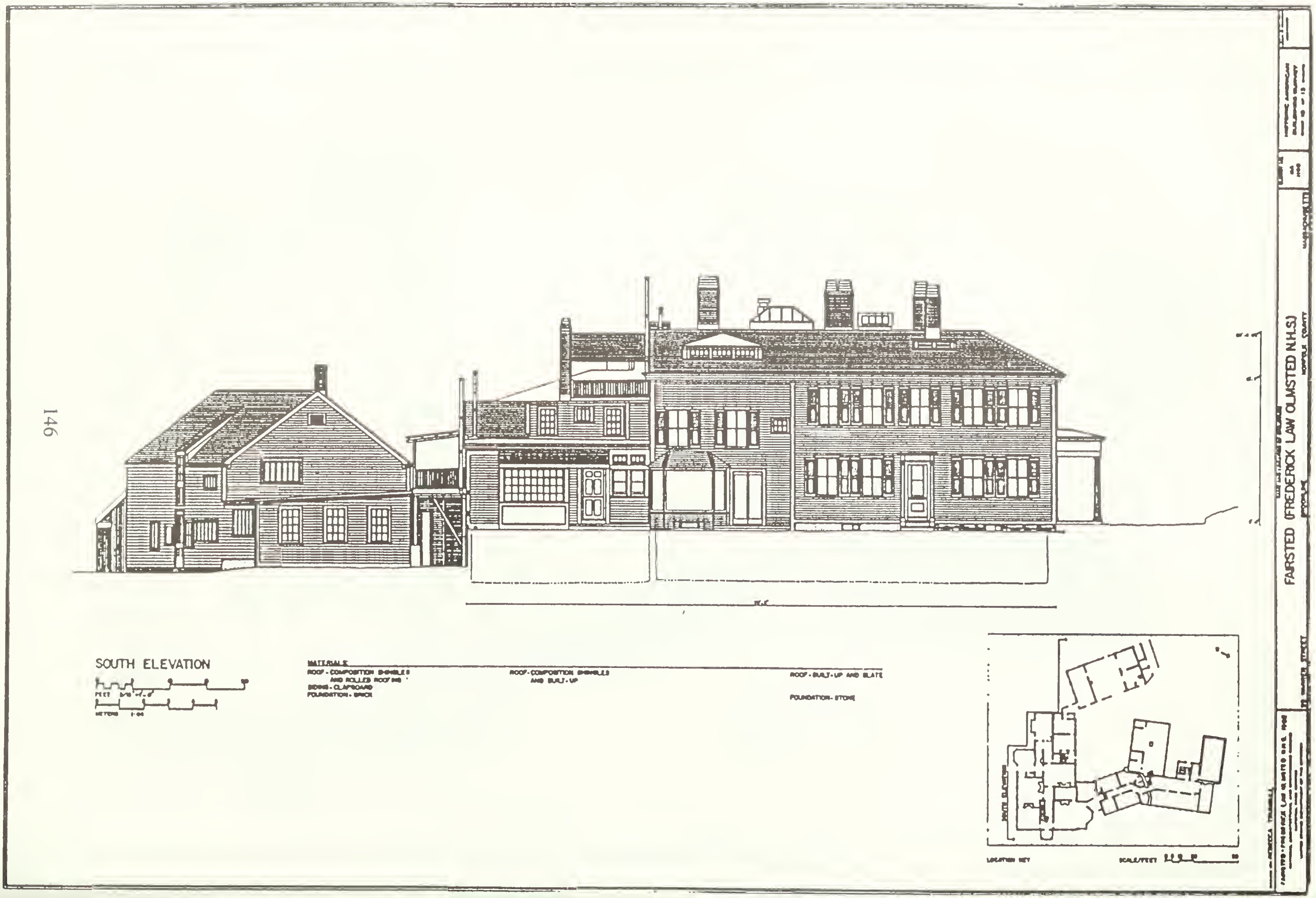
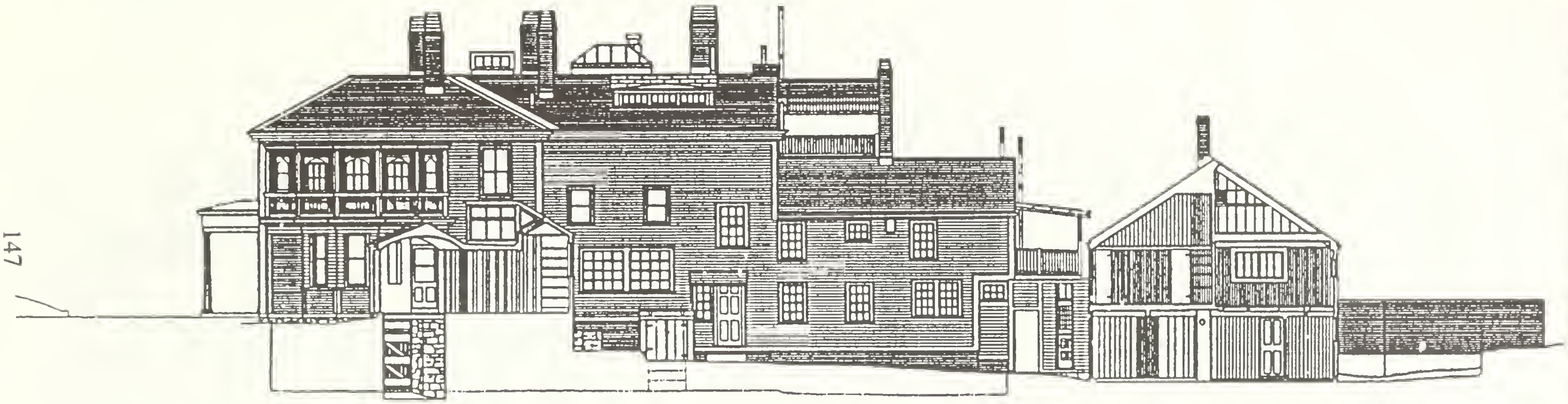
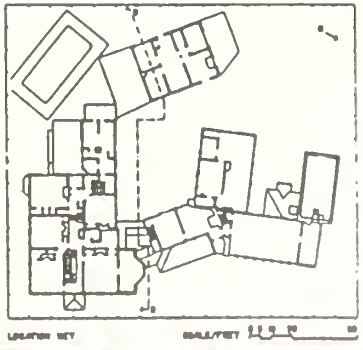
SIDING - CLAPBOARDS
FOUNDATION - STONE
ROOF - BUILT-UP AND COMPOSITION SHINGLES
ROOF - COMPOSITION SHINGLES
EAST ELEVATION
LOCATION KEY
SCALE/FEET

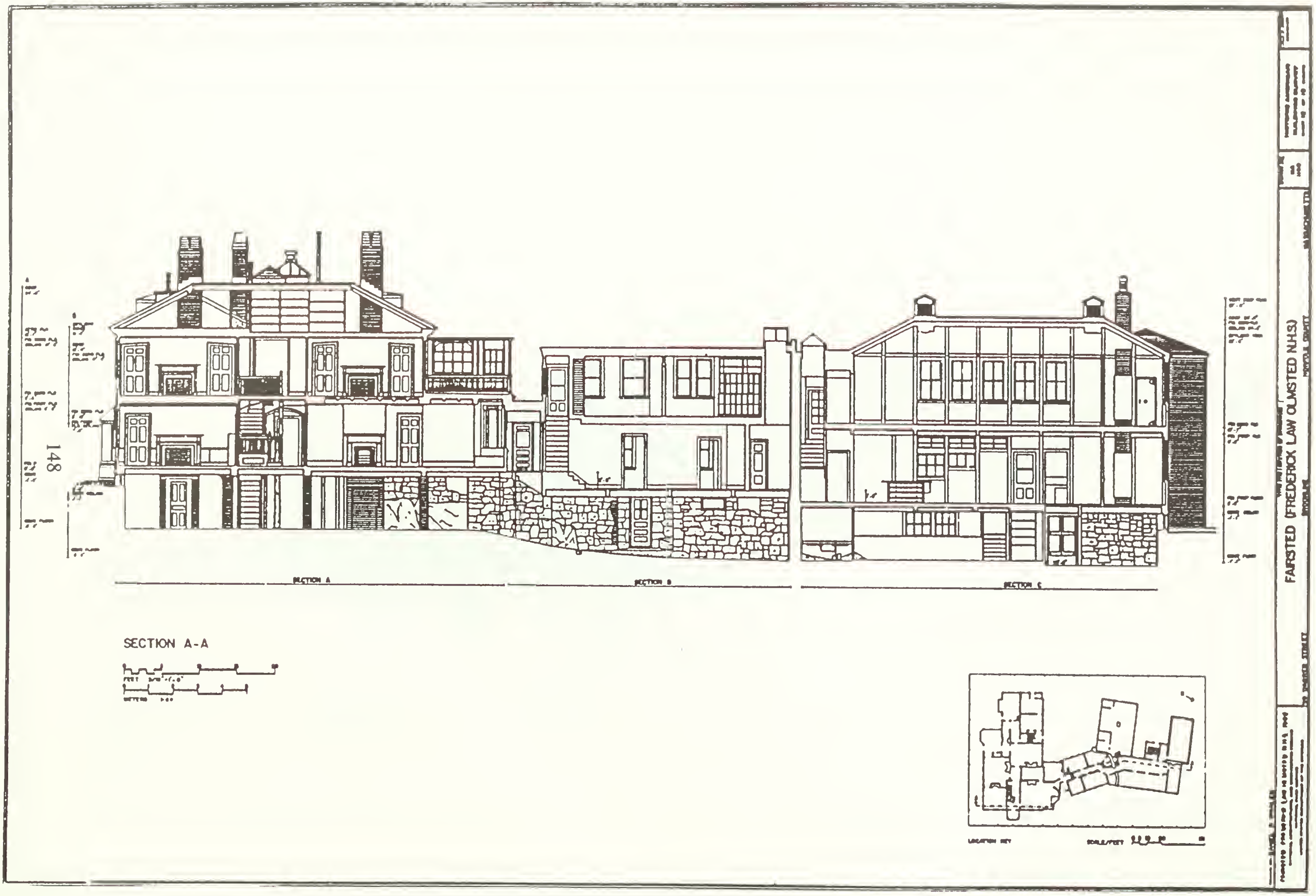

SOUTH ELEVATION
FEET
METERS
MATERIALS
ROOF - COMPOSITION SHINGLES AND ROLLED ROOFING
SIDING - CLAPBOARD
FOUNDATION - BRICK
ROOF - COMPOSITION SHINGLES AND BUILT - UP
ROOF - BUILT - UP AND SLATE
FOUNDATION - STONE
LOCATION KEY
SCALE/FEET
SOUTH ELEVATION
FAIRSTED (FREDERICK LAW OLMSTED N.H.S.)
BROOKLINE
NORFOLK COUNTY
MASSACHUSETTS



SECTION/ELEVATION B-B



FARSTED (FREDERICK LAW OLMSTED N.H.S.)


SECTION A
SECTION B
SECTION C
SECTION A-A
LOCATION KEY
FAIRSTED (FREDERICK LAW OLMSTED N.H.S)

APPENDIX B.

Finishes Analysis

[Note: The finishes charts in the following section use an asterisk (*) to denote paints that are lead-based.]

North Parlor Finishes

Since the North Parlor is physically part of the house, no separate exterior finishes analysis was performed for it. The information about exterior finishes contained in Volume 1, "House: Appendix F" applies to the North Parlor. However, since the North Parlor functioned historically as part of the Olmsted firm's office complex, it was included in the thorough interior finishes analysis performed for the offices, as follows.

Interior Elements

Analysis of Individual Elements

The paint samples analyzed from the North Parlor revealed that most of the architectural fabric in this room dates to circa 1887, when Frederick Law Olmsted, Sr., remodeled this space for his office. At this time, the north wall of the room was moved approximately 7 feet northward, and the bay window in that wall was enlarged. Other alterations made to the room at this time that were documented through paint analysis include: the laying of a new finish floor, the replastering of the walls, the replacement of all window and doorway casings, the replacement of all window sashes, the exposure and casing of the ceiling beams and joists, and the replastering of the ceiling between those framing members.

Walls. Paint samples taken from the plaster walls (FRLA 01 P070-P072) contain three layers of early paint (cream, cream, and green), followed by a residue of wallpaper paste and fragments of wallpaper, and finally a layer of modern white sand paint. The early paint layers are lead-based oil paints; the white sand paint has a latex base. The discrepancy between the number of paint layers on the typical circa-1887 woodwork (11) and the plaster (5) suggests that the walls may have been papered several times. However, no specific information about the wallpapers, other than that they were hung between the third and fifth layers of paint, can be gleaned from these samples.

Ceiling. Paint samples taken from the casings of the ceiling beams and joists indicate that they were painted yellow during the historic period. The plaster ceiling between the cased framing members was originally unpainted. It was colored by tinting the finish coat of plaster a salmon color. This ceiling remained unpainted until the room's most recent redecorating, when it was painted white.

Woodwork. The woodwork in the North Parlor has been painted cream throughout most of its 100-year history. Samples reveal that the woodwork has been painted approximately nine times, and that the first seven paint schemes had cream-colored lead-based oil paint on the woodwork. The eighth and ninth paint schemes for the North Parlor saw the woodwork painted white and brown, respectively. The white and brown paints are latex-based.

Some of the woodwork in the North Parlor does not have the typical circa-1887 paint layering sequence, and so represents either later alterations or reused building fabric. This woodwork includes all of the doors in the room, the casing of the west-wall doorway, the south-wall baseboard in front of the former west doorway opening, and the window seat in the north bay.

Restoration Finishes

The restoration paint colors for the North Parlor are those of its 1887 paint scheme, when this room served as the office of Frederick Law Olmsted, Sr. The paint colors and type are as follows:

Plaster Walls: Munsell - 5Y 9/2	Benjamin Moore - GB-36 Paint type - Semigloss oil
Woodwork: (except ceiling joists and beams)	Munsell - 5Y 9/2 Benjamin Moore - GB-36 Paint type - Gloss oil
Casing of ceiling joists and beams:	Munsell - 2.5Y 8/4 Benjamin Moore - GB-27 Paint type - Gloss oil
Plaster Ceiling:	Munsell - 7.5YR 8/4 Benjamin Moore - OP-35 Paint type - Flat oil

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1887 Interior Woodwork		
1. cream*	FRLA 01 P078	East wall, southeast corner post casing
2. cream*	FRLA 01 P079	East wall, middle window sill
3. cream* (brown w/NA_2S)	FRLA 01 P080	East wall, middle window apron
4. cream*	FRLA 01 P081	East wall, middle window casing
5. cream*	FRLA 01 P082	East wall, baseboard (flat, lower portion)
6. cream*	FRLA 01 P083	East wall, baseboard (top molding)
7. cream* (brown w/NA_2S)	FRLA 01 P084	East wall, northeast corner post
8. cream*	FRLA 01 P086	North doorway casing
9. white*	FRLA 01 P092	South doorway casing
10. white		
11. brown		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1887 Ceiling Plaster		
1. salmon-colored plaster	FRLA 01 P095	Ceiling under beam molding strip
	FRLA 01 P073	Ceiling (this sample has one layer of white paint over the tinted plaster)

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1887 Wall Plaster		
1. cream*	FRLA 01 P070	Plaster above window seat in north bay
2. cream*	FRLA 01 P072	Plaster in north bay behind window box
3. green*	FRLA 01 P071	Plaster in south wall
4. wallpaper residue		
5. white (sand paint)		

Front Entry Finishes

The Front Entry is the portion of the office complex that has undergone the greatest number of alterations. The paint samples taken from its building fabric (FRLA 02 P114-P144) clearly reflect these alterations. However, because the area of the Front Entry is so small and the alterations were so drastic, the samples cannot be categorized into sizeable groups.

Exterior Elements

Analysis of Individual Elements

On the exterior, original building fabric is only found on the east elevation. This woodwork has the same tan primer as was used on the 1890 exterior fabric of the Clerical Department. The finish color on the clapboards was dark red; on the wood trim was dark green paint (P114-115, 118). The gutters and cornice fascia board on the east elevation are later alterations, possibly dating to 1925, when the second story was added to the Clerical Department. They were originally primed with a dark gray paint and have two to three fewer layers of dark green paint than the other trim on the east elevation (P116-P117).

No exterior elements remain exposed from the first, pre-1900 addition to the Front Entry. The building fabric on the west elevation dates to 1912. This woodwork was not primed originally. Rather, the first coat of paint on the clapboards is dark red; the first on the trim is dark green. This woodwork has only three layers of dark red and dark green paint, compared with six to seven layers of this paint on the original east elevation woodwork (P119-P126).

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890 Exterior Wood Trim		
1. tan*	FRLA 02 P114	East elevation - window casing
2. dark green*	FRLA 02 P115	East elevation - doorway casing
3. dark green*		
4. dark green*		
5. dark green*		
6. dark green*		
7. gray		
8. gray		
9. brown		
10. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890 Exterior Clapboards		
1. tan*	FRLA 02 P118	East elevation - clapboards
2. red*		
3. red*		
4. red		
5. red*		
6. red*		
7. gray		
8. gray		
9. brown		
10. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1925(?) Cornice & Gutters		
1. dark gray*	FRLA 02 P116	East elevation - cornice
2. dark green*	FRLA 02 P117	East elevation - gutter
3. dark green*		
4. dark green*		
5. gray		This same paint layering sequence is found on the cornice and gutters of the Clerical Department.
6. gray		
7. brown		
8. green		

Interior Elements

Analysis of Individual Elements

On the interior of the Front Entry, the 1890 woodwork has three layers of finish. It was originally shellacked, and since 1960 has been painted with two layers of latex paint (FRLA 02 P127-P130). This sequence of finishes is also found on the woodwork of the remaining portions of the pre-1900 addition to the Front Entry (P134).

The walls of the 1912 addition to the Front Entry were finished with "Compo-Board." This material was used elsewhere in the office complex, but was not originally painted. It is assumed, therefore, that the lead-base layers of white and cream paint found on the "Compo-Board" of the Front Entry are early, but not original (P137). The wood trim in the 1912 addition was originally shellacked (P139-P140). As elsewhere in the Front Entry, in recent years all of the interior surfaces have been painted over with latex paint.

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890 Interior Woodwork		
1. shellac	FRLA 02 P127	East wall - doorway casing
2. yellow	FRLA 02 P128	East wall - window casing
3. tan	FRLA 02 P129	North wall - doorway casing
	FRLA 02 P130	Ceiling - 1890 portion of the building
	FRLA 02 P134	North wall - pre-1900 addition

Clerical Department Finishes

Exterior Elements

Analysis of Individual Elements

The paint samples taken from the exterior of the Clerical Department provided useful information for documenting the alterations that have been made to the building and for identifying its various color schemes. Comparison of paint samples was also used to identify reused architectural elements.

The most informative paint layer in the exterior samples studied was the first layer—the primer. Original (1890) exterior building fabric was primed with a tan paint, while the 1925 exterior woodwork was primed with a gray paint. Presented below are charts in which the paint samples with the same paint layering sequences are grouped and identified by sample number and location.

These charts reveal that the only 1890 woodwork remaining on the exterior of the Clerical Department is located on the first story of the east elevation. It includes the casings around windows one, two, five, and six (counting from south to north), the continuous window sill, and the majority of the clapboards. Most of the remaining exterior woodwork dates to the 1925 alterations. This includes the clapboards, window trim, corner boards, and the cornice on the second stories of the south and east elevations, and on the first and second stories of the west elevation. The casing around window number three (counting from south to north on the first story of the east elevation), and the two-story jog at the north end of the east elevation, also date to 1925.

Several paint samples do not fall into these principal groups. Samples P070 and P071, taken from the gutter and cornice of the first story of the east elevation, have neither a tan nor a gray primer. The first layer of paint is dark gray (almost black), suggesting that the gutter and cornice were replaced at some date other than 1925. The original gutters were hung with metal straps. The existing gutter is nailed onto the fascia board, so it is known to be a replacement. Paint samples taken from the casing of window number four (P068, P103), counting from south to north on the first story of the east elevation, have the same paint layering sequence as on the gutter and cornice.

The west-wall basement door does not have a typical primer, either. The first layer of paint on this door is white. It is probably a reused door, possibly the original west-wall basement door. The white primer, however, suggests that it more likely came from another building.

Paint samples taken from the window sashes indicate that the sashes were not primed similarly to the architectural woodwork. The first layer of paint on the sashes, from both 1890 and 1925 windows, is black.

In addition to helping to document the alterations made to the Clerical Department, analysis of the paint samples also revealed the different paint schemes for the building. The schemes are presented in a chart below.

The 1890 portion of the Clerical Department appears to have been painted 10 times, three times before the second story was added 1925. The original paint scheme consisted of dark red clapboards, dark green wood trim, and black window sashes. These paints are lead-base oil paints. This color scheme continued to be used until the 1950's, when all of the exterior woodwork (clapboards, trim, and sashes) were painted gray. This color scheme was repeated once and then followed by monochromatic brown and green paintings. All of the paints used on the exterior of the building after circa 1950 are latex paints.

It should be noted that all of the exterior woodwork was not painted every time the Clerical Department was painted. This was especially true of the windows. The paint samples taken from the 1925 window sashes contain only four layers of paint, while those taken from the clapboards have nine layers. The outermost layer of paint on some second-story window sills is brown, rather than the green on the other woodwork.

Restoration Finishes

In keeping with the circa-1930 restoration date for the buildings, the exterior of the Clerical Department should be painted with the following colors:

clapboards - dark red, Munsell 7.5R 3/4
wood trim - dark green, Munsell 2.5BG 3/2
window sashes - black, Munsell N1.5/

Historic Exterior Paint Schemes

	Clapboards	Wood Trim	Window Sashes
circa 1890	red*	green*	black
circa 1900	red*	green*	black
circa 1910	red*	green*	black
circa 1925	red*	green*	black
circa 1935	red*	green*	black
circa 1940	red*	green*	black
circa 1950	gray	gray	gray
circa 1955	gray	gray	gray
circa 1960	brown	brown	brown
circa 1968	green	green	brown

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1925 Exterior Trim		
1. gray*	FRLA 02 P074	East elevation, second story - southeast corner board
2. dark green*	FRLA 02 P080	West elevation, first story - sill board
3. dark green*	FRLA 02 P082	West elevation, first story - northwest corner board, below windows
4. dark green*	FRLA 02 P085	West elevation, first story - window casing
5. dark green*	FRLA 02 P086	Same as above
6. gray	FRLA 02 P091	East elevation, second story - window casing
7. gray	FRLA 02 P092	East elevation, second story - cornice, wide fascia board
8. brown	FRLA 02 P094	East elevation, second story - cornice, molded portion
9. green	FRLA 02 P095	East elevation, second story - window sill
	FRLA 02 P096	South elevation, second story - window casing
	FRLA 02 P098	South elevation, second story - cornice, wide fascia board
	FRLA 02 P102	East elevation, first story - window casing, third window (north to south)
	FRLA 02 P108	East elevation, first story, 1925 jog - corner board
	FRLA 02 P109	West elevation, second story - window sill
	FRLA 02 P110	West elevation, second story - south window, casing

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890 Clapboards		
1. tan*	FRLA 02 P063 FRLA 02 P064	East elevation, first story - clapboards below windows
2. red*	FRLA 02 P069	East elevation, first story - clapboards on south side of south window
3. red*		
4. red*		
5. red*		
6. red*		
7. red*		
8. gray		
9. gray		
10. brown		
11. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890 Exterior Trim		
1. tan*	FRLA 02 P061	East elevation, first story - horizontal sill band
2. dark green*	FRLA 02 P065	East elevation, first story - foundation fascia board
3. dark green*	FRLA 02 P100	East elevation, first story - first window (S to N), casing
4. dark green*	FRLA 02 P101	East elevation, first story - second window (S to N), casing
5. dark green*	FRLA 02 P104	East elevation, first story - fifth window (S to N), casing
6. dark green*	FRLA 02 P105	East elevation, first story - sixth window (S to N), casing
7. dark green*	FRLA 02 P106	East elevation, first story - window in 1925 jog (moved), casing
8. gray	FRLA 02 P112	East elevation, first story - southeast corner board
9. gray		
10. brown		
11. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1890-1925 Exterior Trim		
1. dark gray (almost black)*	FRLA 02 P070	East elevation, first story - cornice
2. green*	FRLA 02 P071	East elevation, first story - gutter
3. green*	FRLA 02 P068	East elevation, first story - fourth window (S to N), casing
4. gray	FRLA 02 P103	
5. gray		
6. brown		
7. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1925 Window Sashes		
1. black	FRLA 02 P099	South elevation, second story - window sash
2. black		
3. gray		
4. brown		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1925 Clapboards		
1. gray*	FRLA 02 P073	East elevation, first story - 1925 jog, clapboards
2. red*	FRLA 02 P083	West elevation, first story - clapboards below windows
3. red*	FRLA 02 P084	West elevation, first story - clapboards between windows
4. red*	FRLA 02 P090	West elevation, second story - clapboards
5. red*	FRLA 01 P092	East elevation, second story - clapboards
6. gray	FRLA 02 P097	South elevation, second story - clapboards
7. gray	FRLA 02 P066	East elevation, first story - clapboards between windows 3 & 4 (S to N)
8. brown	FRLA 02 P107	East elevation, first story - 1925 jog, clapboards
9. green		

Interior Elements

Few paint samples were taken from the interior of the Clerical Department. All of the woodwork in these rooms—matched-board wall and ceiling coverings and doorway and window casings—was originally varnished. During the 1960's, most of the first-story woodwork was painted over with pastel-colored latex paints.

North Drafting Wing Finishes

Exterior Elements

Analysis of Individual Elements

Like the Clerical Department, the majority of the paint samples taken from the exterior of the North Drafting Wing fall into two categories—those with a tan primer (used on 1891 woodwork) and those with a gray primer (used on 1911 woodwork). The following charts identify the paint samples with the same paint layering sequences and their locations.

The paint samples with the tan primer are from the first story of the North Drafting Wing, primarily the north and east elevations. The majority of the samples with the gray primer are found on the second story of the building; however, several first-story window casings also have the gray primer, indicating that they were added or altered in 1911. These windows include the easternmost and westernmost windows on the north elevation (FRLA 02 P192 and P196), and all of the first-story windows on the west elevation (P200-P203). The north windows are 1911 additions; the west windows are 19th-century alterations, since they appear in the pre-1900 photograph of the west elevation of the North Drafting Wing.

The paint samples taken from the west elevation's basement windows (P203-P205), like the paint samples from the 1891 woodwork, have a tan primer. Close examination of this primer reveals, however, that it is a slightly more rose-colored tan than the paint used on the other 1891 North Drafting Wing woodwork. It is the same primer as was used on the Rear Entry. This paint evidence supports the contention that an exterior stairway was originally built along the west wall of the North Drafting Wing, but that it was removed and replaced by the Rear Entry during construction, or—more likely—immediately after the building was completed.

Other building elements lacking a categorizing primer paint include five windows on the east elevation—two first-story windows (windows one and six, counting from south to north), and three basement windows (those in the men's lunchroom). The two first-story windows both have a clearly distinguishable red/brown primer, indicating that they were added at the same time. Since they appear in the 1911 elevation drawings for the North Drafting Wing, and because they lack the gray primer to identify them as 1911 work, their installation can be dated to 1891-1911. The basement windows do not have a primer of contrasting color. The first layer of paint on their casings is the same as the dark green finish paint. Other physical evidence, cited in the main text of the report, indicates that these three windows were installed circa 1902.

Like the Clerical Department, the North Drafting Wing appears to have been painted 10 times. Since these buildings were constructed within 2 years of each other to form a unified office complex, it is not surprising that their exteriors were painted the same colors. These colors were dark red on the clapboards, dark green on the wood trim, and black on the window sashes. The chart presented below indicates that these buildings have had the same paint scheme since their construction.

Restoration Finishes

Restoration of the exterior of the North Drafting Wing to its circa-1930 appearance will require that all the exterior woodwork be painted the following colors:

clapboards	-	dark red (Munsell 7.5R 3/4)
wood trim	-	dark green (Munsell 2.5 BG 3/2)
window sashes	-	black (Munsell N1.5/)

Historic Exterior Paint Schemes

	Clapboards	Wood Trim	Window Sashes
circa 1891	red*	green*	black
circa 1900	red*	green*	black
circa 1910	red*	green*	black
circa 1925	red*	green*	black
circa 1935	red*	green*	black
circa 1940	red	green	black
circa 1950	gray	gray	gray
circa 1955	gray	gray	gray
circa 1960	brown	brown	brown
circa 1968	green	green	brown

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1891 Clapboards		
1. tan*	FRLA 02 P004	North elevation, first story - clapboards
2. red*	FRLA 02 P005	North elevation, first story - clapboards
3. red*	FRLA 02 P006	East elevation, first story - clapboards
4. red*		
5. red*		
6. red*		
7. red*		
8. gray		
9. gray		
10. brown		
11. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1891 Exterior Trim		
1. tan*	FRLA 02 P012	North elevation, first story - window casing
2. dark green*	FRLA 02 P022	West elevation, first story - lunchroom windows
3. dark green*	FRLA 02 P028	East elevation, first story - third window (S to N), casing
4. dark green*	FRLA 02 P029	East elevation, first story - third window (S to N), sill
5. dark green*	FRLA 02 P191	East elevation, first story - eighth window (S to N), casing
6. dark green*	FRLA 02 P193	North elevation, first story - second window (E to W), casing
7. dark green*	FRLA 02 P194	North elevation, first story - third window (E to W), casing
8. gray	FRLA 02 P195	North elevation, first story - fourth window (E to W), casing
9. gray		
10. brown		
11. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1891 Trim Installed with Rear Entry		
1. tan* (with rose tone) - matches tan on Rear Entry; differs from primer used on N & E elevations)	FRLA 02 P204	West elevation, basement - window casing, top board
2. dark green*	FRLA 02 P205	West elevation, basement - window casing, south side
3. dark green*	FRLA 02 P206	West elevation, basement - window casing, north side
4. dark green*		
5. dark green*		
6. dark green*		
7. dark green*		
8. gray		
9. gray		
10. brown		
11. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1911 Exterior Wood Trim		
1. gray*	FRLA 02 P015	North elevation, second story - first window (E to W), casing
2. dark green*	FRLA 02 P016	North elevation, second story - third window (E to W), casing
3. dark green*	FRLA 02 P192	North elevation, first story - first window (E to W), casing
4. dark green*	FRLA 02 P196	North elevation, first story - fifth window (E to W), casing
5. dark green*	FRLA 02 P199	North elevation, second story - NE corner board
6. dark green*	FRLA 02 P200	West elevation, first story - window casing
7. gray	FRLA 02 P201	West elevation, first story - 3-over-3 double-hung window, casing
8. gray	FRLA 02 P202	West elevation, first story - 3-light window, casing
9. brown	FRLA 02 P203	West elevation, first story - quarter-round under window sill
10. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1891-1911 Exterior Window Elements		
1. red/brown*	FRLA 02 P026	East elevation, first story - first window (S to N), casing
2. dark green*	FRLA 02 P027	East elevation, first story - first window (S to N), sill
3. dark green*	FRLA 01 P190	East elevation, first story - sixth window (S to N), casing
4. dark green*		
5. dark green*		
6. dark green*		
7. gray		
8. gray		
9. brown		
10. dark green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
1911 Clapboards		
1. gray*	FRLA 02 P001	North elevation, second story - clapboards
2. red*	FRLA 02 P002	West elevation, second story - clapboards
3. red*	FRLA 02 P003	East elevation, second story - clapboards
4. red*		
5. red*		
6. red*		
7. gray		
8. gray		
9. brown		
10. green		

Interior Elements

Analysis of Individual Elements

The original finish on the interior woodwork of the North Drafting Wing—the matched-board wall and ceiling coverings and doorway and window casings—is shellac. In the men's lunchroom, the finished south half of the North Drafting Wing basement, the shellacked woodwork was later painted. The main dining area was painted with latex paints circa 1960 (FRLA 02 P019-P020). The small room in the northeast corner was painted considerably earlier. Paint sample P018, taken from the matched-board sheathing in this room, contains six layers of lead-base paint as well as two layers of modern latex paint. On the first story, the woodwork was also painted with latex paints circa 1960.

Restoration Finishes

Restoration of the interior finishes in the North Drafting Wing will involve the repainting, with a neutral color, of the basement rooms. These rooms are to be adaptively reused, hence their pre-1930 finishes will not be restored. On the first story, restoration of the finishes is required. The nonhistoric latex paints will be stripped and a new shellac finish applied. On the second story, the extant historic shellac finish will be cleaned and repaired.

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Interior Woodwork		
1. shellac	FRLA 02 P019	Basement, men's lunchroom - west wall, south end (patched area)
2. yellow	FRLA 02 P020	
3. yellow		
4. yellow (no reaction to Na_2S)		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Interior Woodwork		
1. shellac	FRLA 02 P018	Basement, northeast room (men's lunchroom kitchenette)
2. green*		
3. white*		
4. cream*		
5. cream*		
6. cream		
7. cream*		
8. cream		
9. yellow		

Rear Entry Finishes

Exterior Elements

Paint analysis found that the Rear Entry originally received a tan primer (FRLA 02 P030, P032, and P034-P035). This is the rose-tan paint also found on the basement windows in the west wall of the North Drafting Wing. As discussed previously, the Rear Entry and these basement windows were added during or soon after the construction of the North Drafting Wing in 1891. Paint samples taken from the Rear Entry doorway and door contain only two to three layers of dark green paint (P040-P041). These elements appear to be original building fabric, but should be investigated further. The Rear Entry also has the distinction of having one wall (inside the basement corridor) where the original exterior paint colors of the North Drafting Wing have not been painted over. They represent the circa-1890 color scheme for the office—dark red clapboards and dark green trim (P044-P046).

The Rear Entry has been altered several times, and the paint samples provided useful comparative data for dating these alterations. A major alteration occurred in 1902, when the adjacent Plans Vault was built. The upper part of the west-wall opening to the basement corridor was filled in with clapboards. The remainder of the opening received new trim, and a window was installed in the infilled area. The 1902 trim has four fewer layers of dark green paint than the 1891 trim (P037-P038).

The original gutter appears to have been replaced by the present gutter in 1911: a paint sample from the latter (P043) has the same gray primer used for the 1911 North Drafting Wing alterations. This agrees with early photographs of the Rear Entry, which show a gutter hung with metal straps, whereas the current gutter is nailed to the fascia.

A porch was added to the first-story exterior doorway of the Rear Entry prior to 1965 (figure 103 in Volume 2, Part 1). A paint sample taken from the porch contains only two layers of paint, white and green (P042). Figure 103 shows the Rear Entry and porch to have been painted white. Therefore, the white layer was probably not a primer, as was the case elsewhere on the house and offices with building fabric added just prior to the last painting. The porch was removed prior to 1989.

The west-wall window above the basement corridor opening (fig. 59) was removed and the area clapboarded over after 1965 (fig. 103 in Volume 2, Part 1). The new clapboards also had only two layers of paint, white and green (P033). In this case, the white may have been a primer. The window was recreated before 1989 (see figure 95 in Volume 2, Part 1).

Interior Elements

The matched-board sheathing was originally shellacked, but was covered with latex paint circa 1960.

Planting Department Finishes

Exterior Elements

Analysis of Individual Elements

The paint samples taken from the exterior of the Planting Department fall into three principal categories: those representing the layering sequence on the clapboards, the wood trim, and the window sashes.

Since there were no major additions made to the exterior of the Planting Department, the exterior paint samples had only minimal use for the comparative dating the exterior building fabric. The only two elements that were identified as later building fabric through paint analysis were the west basement window (FRLA 02 P165), and the cover over the west basement window in the north wall (P179).

The Planting Department has been painted nine times. The original paint scheme consisted of dark red clapboards, dark green trim, and black window sashes. These are lead-base oil paints. This color scheme continued to be used until the 1950's, when all of the exterior woodwork—clapboards, trim, and window sashes—were painted gray. This color scheme was repeated once, and was then followed by monochromatic brown and green color schemes. All of the paints used on the exterior of the building after circa 1950 were latex paints.

Restoration Finishes

Restoration of the exterior of the Planting Department to its appearance circa 1930 will require that all of the exterior woodwork be painted the following colors:

clapboards - dark red (Munsell 7.5R 3/4)
wood trim - dark green (Munsell 2.5BG 3/2)
window sashes - black (Munsell N1.5/)

Historic Exterior Paint Schemes

	Clapboards	Wood Trim	Window Sashes
circa 1900	red*	green*	black
circa 1910	red*	green*	dark green
circa 1925	red*	green*	black
circa 1935	red*	green*	black
circa 1940	red*	green*	black
circa 1950	gray	gray	gray
circa 1955	gray	gray	gray
circa 1960	brown	brown	brown
circa 1968	green	green	dark green

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1900 Clapboards and Exterior Trim		
1. brown*	FRLA 02 P158	South elevation, first story - clapboards
2. red*	FRLA 02 P159	South elevation, first story - quarter round under window sill
3. red*	FRLA 02 P161	South elevation, second story - clapboards
4. red*	FRLA 02 P168	West elevation, first story - clapboards
5. red*	FRLA 02 P173	West elevation, second story - clapboards
6. red*	FRLA 02 P183	North elevation, first story - quarter round under window sill
7. gray	FRLA 02 P187	North elevation, second story - clapboards
8. gray		
9. brown		
10. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Post-1900 Exterior Trim		
1. tan*	FRLA 02 P165	West elevation, foundation - window casing
2. dark green*		
3. dark green*		
4. dark green*		
5. dark green*		
6. gray		
7. gray		
8. brown		
9. green		

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Circa-1900 Exterior Trim		
1. brown*	FRLA 02 P151	South elevation, foundation - sill board, flat portion
2. dark green*	FRLA 02 P153	South elevation, foundation - sill board, angled portion
3. dark green*	FRLA 02 P155	South elevation, first story - center windows, casing
4. dark green*	FRLA 02 P156	South elevation, first story - east window, casing
5. dark green*	FRLA 02 P160	South elevation, first story - SW corner post
6. dark green*	FRLA 02 P162	South elevation, second story - west window, casing
7. gray	FRLA 02 P163	South elevation, second story - west window, sill
8. gray	FRLA 02 P166	West elevation, foundation - sill board, flat portion
9. brown	FRLA 02 P167	West elevation, foundation - sill board, angled portion

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
10. green	FRLA 02 P169	West elevation, first story - window casing
	FRLA 02 P171	West elevation, first story - window casing
	FRLA 02 P174	West elevation, second story - window casing
	FRLA 02 P175	West elevation, second story - window sill
	FRLA 02 P178	North elevation, basement - west-window casing
	FRLA 02 P180	North elevation, foundation - sill board, angled portion
	FRLA 02 P181	North elevation, foundation - sill board, flat portion
	FRLA 02 P182	North elevation, first story - NW corner post
	FRLA 02 P185	North elevation, second story - center window, sill
	FRLA 02 P186	North elevation, second story - center-window casing

Typical Paint Layering Sequence [1 = earliest]	Paint Sample Numbers	Paint Sample Locations
Window Sashes		
1. black*	FRLA 02 P157	South elevation, first story
2. dark green*	FRLA 02 P164	South elevation, second story
3. black*	FRLA 02 P170	West elevation, first story
4. dark green*	FRLA 02 P172	West elevation, first story
5. black*	FRLA 02 P176	West elevation, second story
6. gray	FRLA 02 P177	North elevation, basement - west window
7. gray	FRLA 02 P184	North elevation, second story
8. brown		
9. green		

Interior Elements

Analysis of Individual Elements

Unlike the first story of the Clerical Department and North Drafting Wing, the woodwork in the first story of the Planting Department was generally not painted with latex paint circa 1960. Only the woodwork of the first-story men's toilet and adjacent coat room were painted. The remainder of the woodwork—the matched-board covering of the walls and ceilings, and the doorway and window casings—retains its original shellac finish.

Restoration Finishes

Restoration of the Planting Department's interior finishes will require the removal of the latex paint from the men's toilet and coat room, and the reapplication of a shellac finish. The remainder of the woodwork, which retains its historic shellac finish, should be cleaned, and damaged areas should be repaired.

Plans Vault Finishes

The brick Plans Vault has practically no painted surfaces. Only the wood gutter and wooden roof louvers were painted. They were painted the same color as the office wood trim. On the interior, the Plans Vault has no painted surfaces.

APPENDIX C.

Mortar Analysis

Methodology

Mortar samples were removed from the office buildings at the Frederick Law Olmsted NHS and numbered sequentially. (Note: numbers FRLA 02 M014-M019 were not assigned.) Samples were taken from the foundation walls, the chimneys, the fire wall, and the walls of the Plans Vault. The samples' locations were chosen to help document alterations that had been made to the buildings. Samples were analyzed according to the mortar analysis procedures developed by the North Atlantic Historic Preservation Center (now the Building Conservation Branch of the Cultural Resources Center). Analysis was used to identify sand type, fines color[1], and mix ratios.

The data from which this summary was prepared is on file at the Cultural Resources Center and is available for further study.

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[1] Fines are those particles of soil too small to be seen individually, or those passing a No. 200 sieve (clay and silt size). Derived from ASTM D 2487 and ASTM D 2488.

Analytical Findings

Front Entry

The mortar sample taken from the interior foundation wall of the 1890 portion of the Front Entry is a soft clay/lime/sand mortar (FRLA 02 M020). Its mix ratio is 1 part clay, 4 parts lime, and 4 parts sand. Its fines color is 10YR 7/2. This mortar is readily identifiable by its coarse black aggregate.

FRLA 02 M020 Front Entry, east foundation wall, interior

Clerical Department

The same mortar used for the foundation of the Front Entry (described previously) was also used for the foundation of the 1890 portion of the Clerical Department (FRLA 02 M021-M023). This is understandable, since the foundations of these buildings were constructed at the same time.

The 1925 addition to the Clerical Department was constructed with a natural-cement mortar (M024-M026). It is grayer in appearance and harder than the mortar used for the 1890 foundation walls. The mix for this mortar is 2 parts natural cement to 3 parts sand. The sand is predominantly tan in color; the fines color is a light tan/gray (Munsell 10YR 7/1). The same mortar was used for other 1925 work, including the construction of the chimney (M08, M11) and the fire wall (M009-M010) shared with the Planting Department.

Nearly all of the original exterior mortar in the 1890 east wall of the Clerical Department has eroded away. Only one area of original mortar was found. The remainder of the wall has been repointed with a hard portland-cement mortar (M027). The mix for this mortar is 6 parts portland cement to 7 parts sand. The sand color is tan, with distinguishing amber grains. The fines color is light gray (Munsell 10YR 7/1).

FRLA 02 M008 Clerical/Planting Department chimney, above roofline

FRLA 02 M009 Clerical/Planting Department fire wall, above roofline

FRLA 02 M010 Clerical/Planting Department fire wall, below roofline

FRLA 02 M011 Clerical/Planting Department chimney, below flashing

FRLA 02 M021 Clerical Department, west foundation wall, interior

FRLA 02 M022 Clerical Department, east foundation wall, interior

FRLA 02 M023 Clerical Department, east foundation wall, exterior

FRLA 02 M024 Clerical Department, west foundation wall, exterior

FRLA 02 M025 Clerical Department, west areaway

FRLA 02 M026 Clerical Department, east foundation wall, jog at north end of building

FRLA 02 M027 Clerical Department, east foundation wall, exterior patching

North Drafting Wing

The original (1891) mortar from the foundation of the North Drafting Wing is a natural-cement mortar (FRLA 02 M028-M030). The mix for this mortar is 3 parts natural cement to 4 parts sand. The sand is brown, with distinguishing larger dark gray and amber grains. The fines color of this mortar is brown (Munsell 10YR 6/3 to 10YR 5/3).

The openings cut for the three windows installed circa 1902 in the east foundation wall of the North Drafting Wing were patched with a portland-cement mortar (M003). It is a very hard, gray mortar, with a mix ratio of 1 part portland cement to 1 part sand.

FRLA 02 M001 North Drafting Wing, east foundation wall, exterior

FRLA 02 M002 North Drafting Wing, north foundation wall [sample missing]

FRLA 02 M003 North Drafting Wing, east foundation wall, exterior patching at windows

FRLA 02 M004 North Drafting Wing, passage, north foundation wall, brick

FRLA 02 M028 North Drafting Wing, west foundation wall

FRLA 02 M029 North Drafting Wing, north foundation wall, exterior

FRLA 02 M030 North Drafting Wing, east foundation wall, exterior

Rear Entry

The mortar of the Rear Entry's foundation, also dating to 1891, is a natural-cement mortar, with a mix ratio of 3 parts natural cement to 4 parts sand (FRLA 02 M031-M032). As discussed in the main body of this report, the Rear Entry appears to have been built either as a construction change to the North Drafting Wing, or immediately after its completion. The similarity of its mortar mix, but its slight difference in sand (smaller grains, lighter brown in color) and the lighter color of its fines (Munsell 10YR 6/3) further supports a slightly later date of construction for the Rear Entry.

FRLA 02 M031 Rear Entry, south foundation wall, exterior

FRLA 02 M032 Rear Entry, west foundation wall, exterior

Planting Department

The circa-1900 Planting Department's foundation is constructed with a hard natural-cement mortar (FRLA 02 M033-M034). It was mixed at a ratio of 1 part natural cement to 1 part sand. The sand used for this mortar is light brown in color; the fines are a tan/gray color (Munsell 10YR 7/1).

This same mortar was used for the lower, stone portion of the areaway along the south foundation wall of the Planting Department (M035). However, the areaway has a raised brick wall around its top edge that was not part of the original structure. It appears to have been constructed when the latticework fence around the opening was removed circa 1925. This brick wall is constructed with a portland-cement mortar (M036). The ratio of the mix is 1 part portland cement to 1 part sand. The sand used for this mortar is gray/brown in color; the fines are gray (Munsell 10YR 8/1). Alterations to the window and window well in the south foundation wall generated the mortar in samples M012-013.

FRLA 02 M012 Planting Department, south wall, window well

FRLA 02 M013 Planting Department, south wall, foundation patching around window

FRLA 02 M033 Planting Department, west foundation wall, exterior

FRLA 02 M034 Planting Department, north foundation wall, exterior

FRLA 02 M035 Planting Department, south areaway, stone portion

FRLA 02 M036 Planting Department, south areaway, brick wall around opening

Plans Vault

The Plans Vault, as described in the main body of this report, was built in two phases. The basement and first story were erected in 1902. The brick walls of this portion were constructed with a natural-cement mortar (FRLA 02 M005-M006). The mix ratio of this mortar is 9 parts natural cement to 7 parts sand. The sand used for this mortar is brown, with notably fine and uniform grain size. The fines color is also brown (Munsell 10YR 6/3). The mortar used for the second story of the Plans Vault circa 1912 is a portland-cement mortar (M007). The sand used for this mortar has distinguishing dark gray and amber grains; the fines are light gray (Munsell 10YR 7/1).

FRLA 02 M005 Plans Vault, first story, south elevation, brick wall

FRLA 02 M006 Plans Vault, first story, west elevation, brick wall

FRLA 02 M007 Plans Vault, second story, south elevation, brick wall

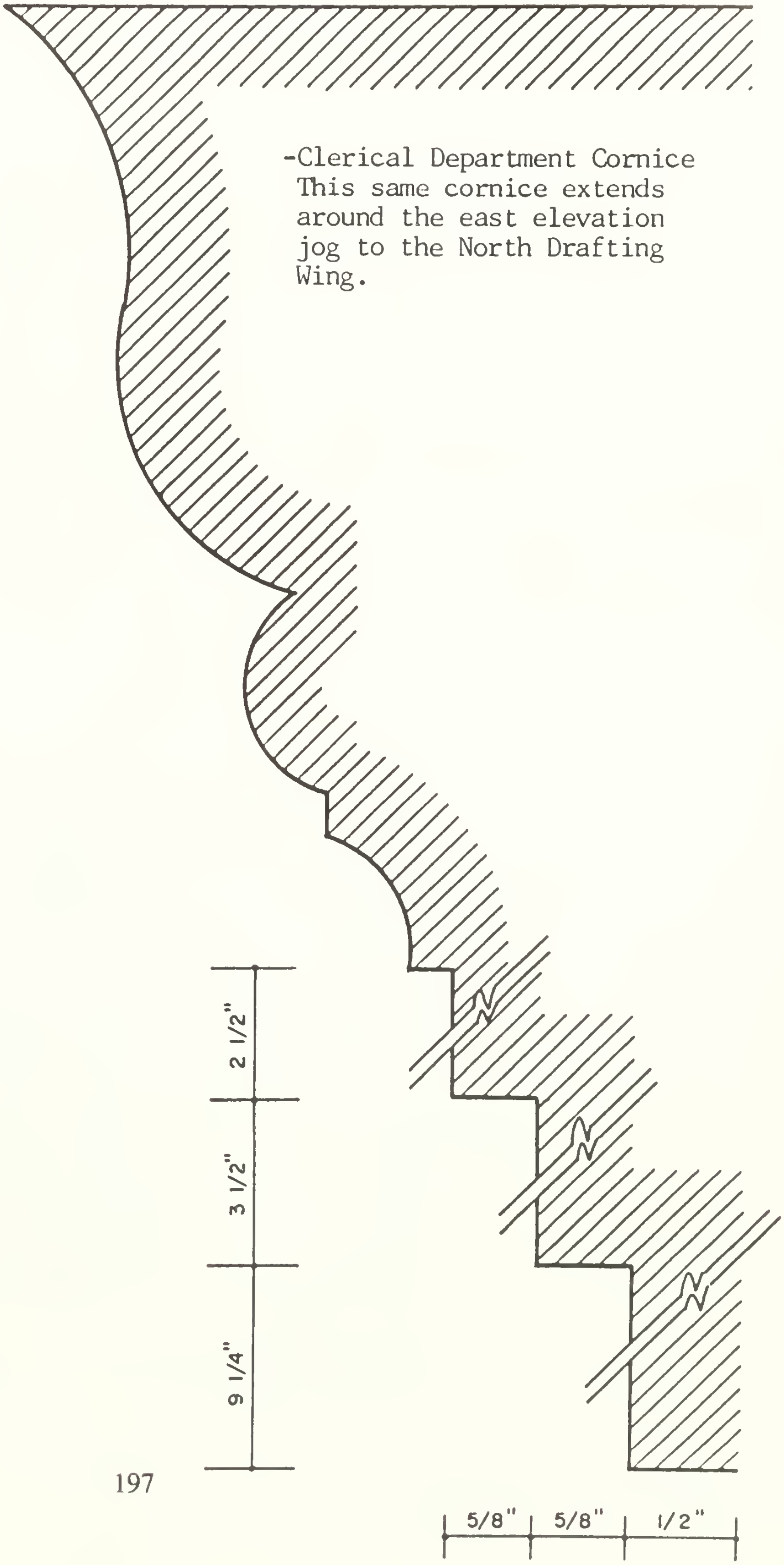
APPENDIX D.

Molding Profiles

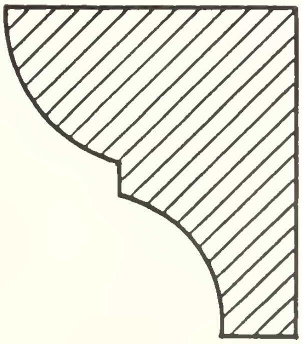
[Note: Molding profiles were taken by Andrea Gilmore; final drawings were by Jana Gross; both National Park Service.]

OFFICE MOLDING PROFILES

EXTERIOR DETAILS



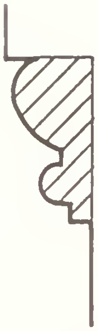
-Clerical Department Cornice
This same cornice extends around the east elevation jog to the North Drafting Wing.



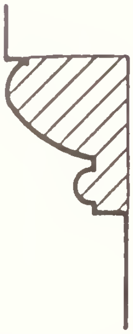
-North Drafting Wing
Molding Under Gutter

OFFICE MOLDING PROFILES

DOOR PANELS



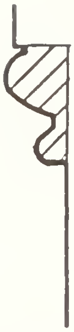
-North Parlor
West Door



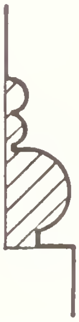
-North Parlor
North Door

-Front Entry
East Door

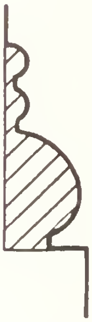
-ca. 1889



-North Parlor
South Door

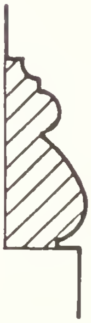


-Planting Department
Printing Room
Closet Door
-Matches original door
molding but is
1/8" narrower

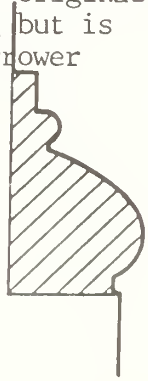


-Planting Department
Men's Coatroom,
toilet room

-Second Floor
Print Room,
North door
-Second Floor
Print Washing Room
Storage Door and
Drying room door



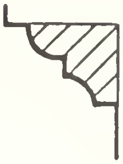
-Planting Department
Second Floor
Stair Door



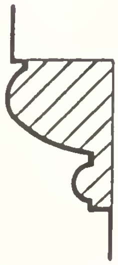
-Rear Entry Door
ca. 1891 (?)

OFFICE MOLDING PROFILES

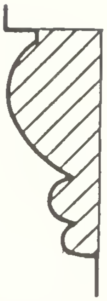
DOOR PANELS



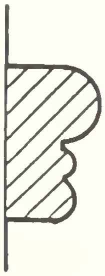
-Clerical Department
Basement Door



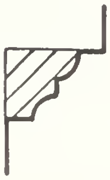
-Clerical Department
Inner Bathroom Door



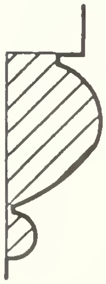
-Clerical Department
West Wall
South Door(reused-
possiblly original
door between North
Drafting Wing and
Clerical Department)



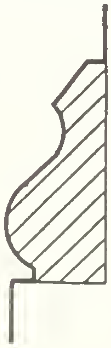
-Clerical Department
Second Floor
Southwest Stair
Door



-Clerical Department
First Floor
Hall East Wall-South door
South Cneter Door
North Center Door
North Door
Hall West Wall-South Door



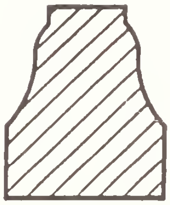
-North Drafting Wing
Basement Passageway
ca. 1891



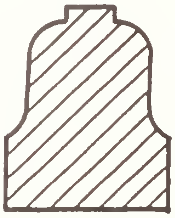
-North Drafting Wing
Men's Lunchroom Doors

OFFICE MOLDING PROFILES

WINDOW MUNTINS
NORTH PARLOR AND FRONT ENTRY

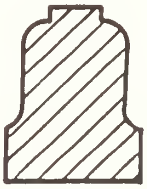


-North Parlor
ca. 1887



-North Parlor
North Door
ca. 1889

-Front entry
East Door

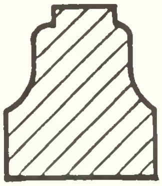


-Front Entry
East Window
ca. 1889

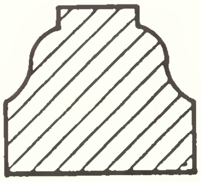
OFFICE MOLDING PROFILES

WINDOW MUNTINS
NORTH DRAFTING WING

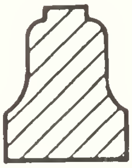
SECOND FLOOR



-East and West
Wall Windows

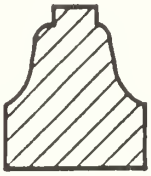


-North Wall
Windows, Except
Western most
Window

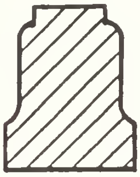


-North Wall,
Western Most
Window

FIRST FLOOR

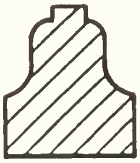


-ca. 1891

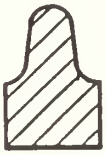


-West Wall
Double hung window

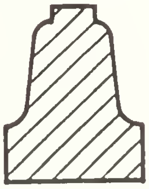
BASEMENT



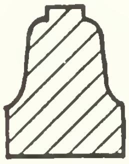
-Men's Lunchroom
Northeast Corner
ca. 1891



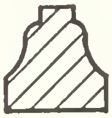
-Men's Lunchroom
West Wall
North Window



-Men's Lunchroom
West Wall
South Window



-Men's Lunchroom
East wall

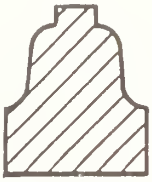


-North Room
North Wall

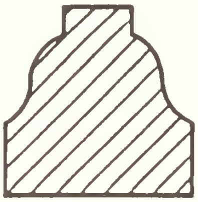
OFFICE MOLDING PROFILES

WINDOW MUNTINS
CLERICAL DEPARTMENT

-First Floor ca. 1899
-Second Floor ca. 1925



-Second Floor
East Wall
Window 3
N--->S

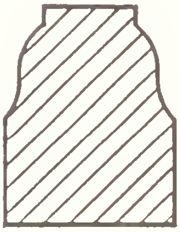


-Second Floor
East Wall
Windows 1,2,4
N--->S

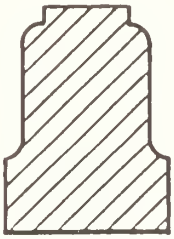
-Second Floor
Photo Room
West Wall
North Window

-Second Floor
Phot Room
West Wall
South Window

-First Floor
Transom in Hall



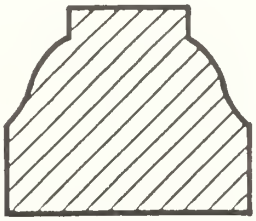
-First Floor
Door in Hall



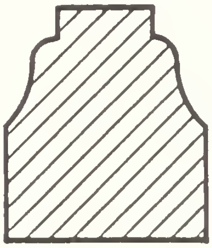
-First Floor
West Wall
South Door

OFFICE MOLDING PROFILES

WINDOW MUNTINS - ca. 1891



-First Floor
Clerical Dept. Hall
Door to Rear Entry

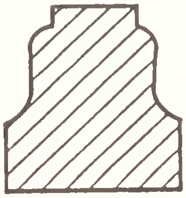


-First Floor
Rear Entry
Glazed Exterior Door

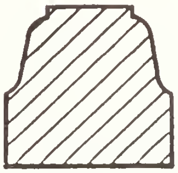
Rear entry window inaccesible due to interior storm window; see front entry window muntins.

OFFICE MOLDING PROFILES

WINDOW MUNTINS - ca. 1900
PLANTING DEPARTMENT

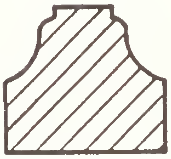


-Second Floor
Stair Door

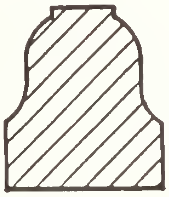


-First Floor

-Second Floor



-Basement
North Wall East
Upper Window



-Basement
North Wall, East Side
Lower Window

-Both Upper
and Lower Windows
of West Side

APPENDIX E.

Door Schedule

North Parlor

Door Location/Date	Stylistic Description	Size	Hardware
North door	Four panels: top two horizontal (glazed); bottom two vertical (wood, recessed and molded)	6′ 8 1/2″ x 2′ 9″ x 1 3/4″	Two-butt, 4″ brass ball hinges; all other hardware modern
West door	Six panels (wood, recessed and molded). Door has been reused from another location: sides have been cut down	6′ 7″ x 2′ 5 1/2″ x 1 7/16″	Five-butt, 4″ brass ball hinges (1925 Clerical Department)
South door	Door has been moved from another location: small strips have been added to the bottom, top, and east sides of the door	6′ 8 1/2″ x 2′ 9″ x 1 7/16″	Two-butt, 3 5/8″ iron hinges; white porcelain knob with brass rose, sliding brass lock, rectangular brass escutcheon

Front Entry

Door Location/Date	Stylistic Description	Size	Hardware
South door	Four panels: top two horizontal (glazed); bottom two vertical (wood, recessed and molded)	6′ 8 1/2″ x 2′ 9″ x 1 3/4″	Two-butt, 4″ brass ball hinges; all other hardware modern
East door	Four panels: top two horizontal (glazed); bottom two vertical (wood, recessed and molded). There is a letter slot in the center rail.	6′ 6″ x 2′ 11 3/4″ x 1 3/4″	Two-butt, 4″ brass ball hinges; oval brass knob, circular brass escutcheon, modern lock
North door Hung: ca. 1889 (now stored in the shed)	Four panels: top two horizontal (upper one glazed, lower one filled with cypress matched “washboard” sheathing); bottom two vertical (wood, recessed and molded)	6′ 4 3/4″ x 2′ 11 1/4″ x 1 3/4″	Swinging brass hinges, wood push plates

Clerical Department

Door Location/Date	Stylistic Description	Size	Hardware
Basement: west door. Hung: ca. 1925 (reused from 1889 west basement wall)	Three panels: all horizontal (wood, recessed and molded) below a four-light window	6′ 6 1/4″ x 2′ 7″	--
First floor: hall, south door. Hung: ca. 1889 (now stored in the shed)	Four panels: top two horizontal (upper one glazed, lower one filled with cypress matched "washboard" sheathing); bottom two vertical (wood, recessed and molded)	6′ 4 3/4″ x 2′ 11 1/4″ x 1 3/4″	Swinging brass hinges, wood push plates
First floor: hall, north door. Hung: ca. 1925	Metal-covered wooden fire door. Marked "IC Fire Door Stock Guaranteed"	6′ 5 1/2″ x 2′ 11 1/4″ x 1 5/8″	24″ iron strap hinges; modern knob
First floor: hall, east wall, south door	Four panels: all horizontal (three one above and three below a single-sash rectangular window)	6′ 7 3/4″ x 2′ 5 1/2″ x 1 5/16″	Five-butt, 4″ brass hinges; circular brass knob, brass rose

Clerical Department (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
First story: hall, east wall, south center door	2 1/2″ piece of wood added to the bottom of this door when it was rehung by NPS	6′ 7 3/4″ x 2′ 5 5/8″ x 1 5/16″	Modern hinges (should be replaced with repro. hinges); circular brass knob, circular brass rose
First story: hall, east wall, north center door	--	6′ 7 3/4″ x 2′ 6″ x 1 5/16″	--
First story: hall, east wall, north door (closet)	Door panel molding	6′ 7 3/4″ x 1′ 11 3/4″ x 1 5/16″	All original hardware
First story: hall, west wall, south door. Hung: ca. 1925	Four panels: all vertical (top two glazed, bottom two wood (recessed and molded)	6′ 11″ x 2′ 6 1/2″ x 1 3/4″	Five-butt, 4″ brass hinges; circular brass rose mounted over rectangular brass plate
First story: hall, west wall, north door. Hung: ca. 1925	Five panels: all horizontal (recessed and molded). Typical ca. 1925	6′ 6 1/2″ x 2′ 2 1/4″ x 1 3/8″	Brass sliding track; brass pocket handle
First story: ladies' toilet room, outer door	Five panels: all horizontal (recessed and molded). Typical ca. 1925	6′ 5 3/8″ x 1′ 11 3/4″ x 1 3/8″	Five-butt, 4″ brass ball hinges; circular brass knob; no escutcheon

Clerical Department (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
First story: ladies' toilet room, inner door	three panels: top one vertical, bottom two horizontal (all recessed and molded)	6′ 6″ x 2′ 0″ x 1 3/4″	Two-butt, 4″ brass ball hinges; oval brass knob; rectangular brass escutcheon with rounded edges; mortise lock
First story: southwest room, closet door	Door is constructed with the same beaded sheathing boards as cover the walls of the room	5′ 4 7/8″ x 2′ 1 7/8″ x 3/4″	Five-butt, 1 3/4″ brass strap furniture hinges
Second story: south stairway door. Hung 1925. This door matches the west door in the south wall of the second story of the North Drafting Wing.	Four panels: top two large (glazed), bottom two vertical (wood, recessed and molded)	6′ 6 3/8″ x 2′ 7 3/4″ x 1 1/2″	Two-butt, 4 1/2″ brass ball hinges, circular brass knob with brass rose, rectangular brass escutcheon
Second story: door between Photo Storage Room and N. Drafting Wing. Hung 1925 (now stored in the shed). This door matches the ca.-1900 Planting Dept. doors and was reused from this building.	Five panels: all horizontal (wood, recessed and molded)	6′ 7 5/8″ x 2′ 7 7/8″ x 1 3/8″	Circular brass rose, rectangular escutcheon; all other hardware missing

Clerical Department (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
Second story: door into Drafting Room closet. Hung: ca. 1925. This door now hangs in the paneled room built at the north end of the first story of the North Drafting Wing	Four panels: all horizontal (one above and three below a single-sash rectangular window). Typical 1925 closet-door pane; molding	6′ 7″ x 2′ 5 3/8″ x 1 5/16″	Circular brass knob with circular brass rose; modern hinges
Second story: drafting room, north door. Hung: ca. 1925	Metal-covered wood door. Labeled "IC Fire Door Stock Guaranteed"	6′ 6 1/4″ x 2′ 6 7/8″ x 1 5/8″	Modern brass knob; 24″ metal strap hinges
Second story: door between Photo Storage and Drafting Rooms	Five panels; all horizontal (wood, recessed and molded); molding typical of 1925 Clerical Dept.	6′ 7 3/4″ x 2′ 5 3/4″ x 1 3/8″	Circular brass rose, Yale lock.

North Drafting Wing

Door Location/Date	Stylistic Description	Size	Hardware
Basement: exterior east and west doors to passage. Hung 1891. The west door was removed and replaced by a metal door in 1985. The east door remains in situ. Its doorway has been filled with concrete block to prevent water penetration into the basement	Nine lights above two vertical panels (wood, recessed and molded)	--	--
Basement: men's lunchroom, door to darkroom. Hung: 1891	Four panels: recessed and and molded	6′ 1″ x 2′ 4″ x 1 3/8″	Black porcelain knob with circular brass rose; rectangular brass escutcheon; two-butt acorn hinges
Basement: men's lunchroom, north door. Hung: 1984	Modern metal; provides access to mechanical room	5′ 0 1/2″ x 2′ 11 3/4″ x 1 3/4″	All modern hardware

North Drafting Wing (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
Basement: men's lunchroom, west door. Hung: 1891	Four panels: recessed and molded	6′ 1 5/8″ x 2′ 11 3/4″ x 1 3/8″	Black porcelain knob with circular brass rose; rectangular brass escutcheon; two-butt acorn hinges
Basement: men's lunchroom closet (under the stairway). Hung: 1891	Four panels: top two wood (recessed and molded); bottom two have been removed and replaced with wire screen	5′ 11 3/4″ x 2′ 0″ x 1 3/8″	Black porcelain knob with circular brass rose; rectangular brass escutcheon; two-butt iron acorn hinges
First story: west wall, north door. Hung: 1891	Four panels: top two horizontal (glazed); bottom two vertical (wood, recessed and molded)	7′ 0″ x 3′ 0″ x 1 3/4″	Modern knob and lock; Two-butt brass ball hinges, iron spring for automatic closure (disconnected)
First story: north partition wall. Hung: ca. 1960 (reused from storage closet in second story of the Clerical Department)	Four panels: all horizontal (one above and three below a single-sash rectangular window). Typical 1925 Clerical Department door	6′ 1/2″ x 2′ 1/2″ x 1 3/8″	Circular brass knob with circular brass rose. Modern hinges

North Drafting Wing (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
First story: south wall. Hung: ca. 1925	Metal-covered wood door. Marked "IC Fire Door Stock Guaranteed"	6′ 5 1/2″ x 2′ 11 1/4″ x 1 5/8″	24″ iron strap hinges; modern knob
First story: west wall, south door (modern). Hung: 1984. (This door should be removed when the interior of the North Drafting Wing is restored.)	Six panels: all horizontal (top three are glazed)	6′ 7 1/2″ x 2′ 7 1/2″ x 1 1/4″	All modern
Second story: south wall, west door. Hung: ca. 1912	Four panels: top two large (glazed), bottom two vertical (wood, recessed and molded)	6′ 8″ x 2′ 8″ x 1 3/8″	Five-butt, 5″ brass ball hinges; circular brass knob with brass rose; rectangular brass escutcheon
Second story: south wall, east door. Hung: ca. 1925	Metal-covered wood door. Labeled "IC Fire Door Stock Guaranteed"	6′ 6 1/4″ x 2′ 6 7/8″ x 1 5/8″	24″ metal strap hinges; modern brass knob

Rear Entry

Door Location/Date	Stylistic Description	Size	Hardware
West door. Hung: 1891	Four panels: top two horizontal (glazed), bottom two vertical (wood, recessed and molded)	6′ 5 1/2″ x 3′ 0″ x 1 3/4″	Oval brass knob with circular brass rose; two-butt, iron acorn hinges; iron spring for automatic closure; modern

Plans Vault

Door Location/Date	Stylistic Description	Size	Hardware
Lower vault	Metal, fireproof door with a combination lock. Door labeled “The Master Safe Company”	6′ 6 3/8″ x 2′ 6 1/2″ x 1/2″	--
Upper vault	Metal, fireproof door with a combination lock	6′ 7 3/4″ x 2′ 6″ x 5/8″	--

Planting Department

Door Location/Date	Stylistic Description	Size	Hardware
Basement: south wall. Hung: ca. 1900	--	--	--
First story: south wall, east door (into men's coat room); originally led to basement stairway. Hung: ca. 1900	Four panels: top two large (glazed), bottom two horizontal (wood, recessed and molded)	6′ 7″ x 2′ 5 5/8″	Two-butt, 4 1/4″ brass ball hinges; circular brass knob and rose; rectangular brass escutcheon
First story: south wall, west door (into men's toilet). Hung: ca. 1900	Bottom panel is glazed	6′ 8″ x 2′ 7 3/4″	--
First story: men's toilet, door into toilet stall	Five panels: all horizontal; top four are wood (recessed and molded); bottom panel is louvered	6′ 8″ x 2′ 1 3/4″ x 1 3/8″	Two-butt, 5 1/4″ brass ball hinges; brass circular knob and rose; rectangular brass escutcheon
First story: men's toilet, door into urinal	Five panels: all horizontal; top four are wood (recessed and molded); bottom panel is louvered	6′ 7″ x 2′ 3 3/4″ x 1 3/8″	Knob on this door is missing

Planting Department (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
First story: southwest corner office	--	--	--
Second story: east wall, stairway door	Nine panels: upper eight panels are paired (glazed); bottom panel is horizontal (wood, recessed and molded)	6' 8 3/4" x 2' 8" x 1 3/8"	--
Second story: Print Room, northeast door	Five panels: all horizontal (wood, recessed and molded)	6' 8" x 2" 7 1/4" x 1 1/2"	Two-butt, 5 1/4" brass ball hinges; brass knob missing; rectangular brass escutcheon
Second story: Print Room, northwest door	--	6" 7 1/2" x 3" 0" x 1 3/8"	This door has its original circular brass knob
Second story: Print Room, closet door. Hung:	Five panels: all horizontal (wood, recessed and molded). This door appears to match the original Planting Department doors. However, upon close examination, the panel molding is seen to be 1/8" smaller than on the ca.-1900 doors.	6" 7 3/4" x 2" 5 3/4" x 1 3/8"	Five-butt, 4 3/4" brass hinges; circular brass knob; no escutcheon

Planting Department (con't.)

Door Location/Date	Stylistic Description	Size	Hardware
Second story: Print Room, ammonia-closet door. Hung: ca. 1925	Five panels: all horizontal (wood, recessed and molded). This door's panel molding matches the panel moldings on the 1925 Clerical Department doors, and appear to have been hung at that time.	6″ 8″ x 2″ 4″ x 1 1/4″	Five-butt, 4 1/8″ brass hinges; black porcelain knob; no escutcheon
Second story: Developing Room, north door	--	6″ 7 1/2″ x 3″ 0″ x 1 3/8″	--
Second story: Drying Room. Hung: ca. 1900	--	7″ 4 3/4″ x 2″ 10″ x 1 3/8″	--

APPENDIX F.

Utility Systems

Electrical System

The historic electric lighting and wiring in the most of the office structures at the Frederick Law Olmsted NHS was upgraded in 1983.[2] (The Plans Vault was not included in this contract, as will be explained in the following section.) The objective of this work was to preserve the existing exposed historic wiring and historic light fixtures, to increase light levels for modern uses, and to improve the safety level of the system. The existing 120-volt system was preserved, and the following modifications were made.

Three new service panels, described below, were installed in the North Drafting Room.

- The main panel supplies power to the alarm equipment and telephones.
- Subpanel one supplies power to critical circuits. The circuits on this panel are new, grounded circuits to feed equipment requiring constant power, e.g., outside floodlights, clocks, and the furnace.
- Subpanel two supplies power to noncritical circuits. The circuits on this panel include all of the historic wiring and circuits not requiring constant power. This panel is controlled by a master switch that is shut off when the site is closed.

Other work was accomplished as well.

- New feeder lines were run in the basement, with rigid metal conduit to both historic and new circuits.
- Concealed knob-and-tube wiring was disconnected and left in place.
- Existing concealed circuits were rerun with flexible metal-clad cable.
- New concealed circuits were run also with flexible metal-clad cable.
- Receptacles and miscellaneous office equipment were disconnected from historic circuits.
- Existing fuse blocks were fed with new circuits.
- 15-amp fuses were replaced with 5-amp fuses.
- Parts of the historic lighting system (cloth-covered wire, broken porcelain insulators, and switches) were replaced in kind.

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[2] Andrea M. Gilmore, "Preserving Historic Electric Lighting and Wiring at the Frederick Law Olmsted National Historic Site," *APT Bulletin*, XVI, No. 3 & 4, 1984. See also "Completion Report: Frederick Law Olmsted NHS Restoration - Electrical" (Lowell, MA: Cultural Resources Center, North Atlantic Region, National Park Service, 1990).

- Historic lighting fixtures were cleaned and rewired.
- Missing historic lighting fixtures were reproduced.
- Supplemental track lighting that can be readily removed was installed in principal interpretive spaces to provide light levels required for current use.

Heating, Ventilation, and Air-Conditioning Systems

The Clerical Department, the North Drafting Wing, and the Planting Department each have a historic humidification device called an "Aqualator" (fig. F1). These are similar to the two 1930 humidifiers in the Front Central Hall of the house. They are no longer operational.

The offices are heated with forced hot water provided by a pair of multi-temperature, "Hydro-therm" boilers installed in the basement of the Planting Department in 1982-1983. Both are fired with oil, which is stored in twin tanks in the southwest corner of the basement. One boiler has pipes that pass through the south wall to heat the Clerical Department and Front Entry. The other has pipes that lead to the North Drafting Wing and the Planting Department.

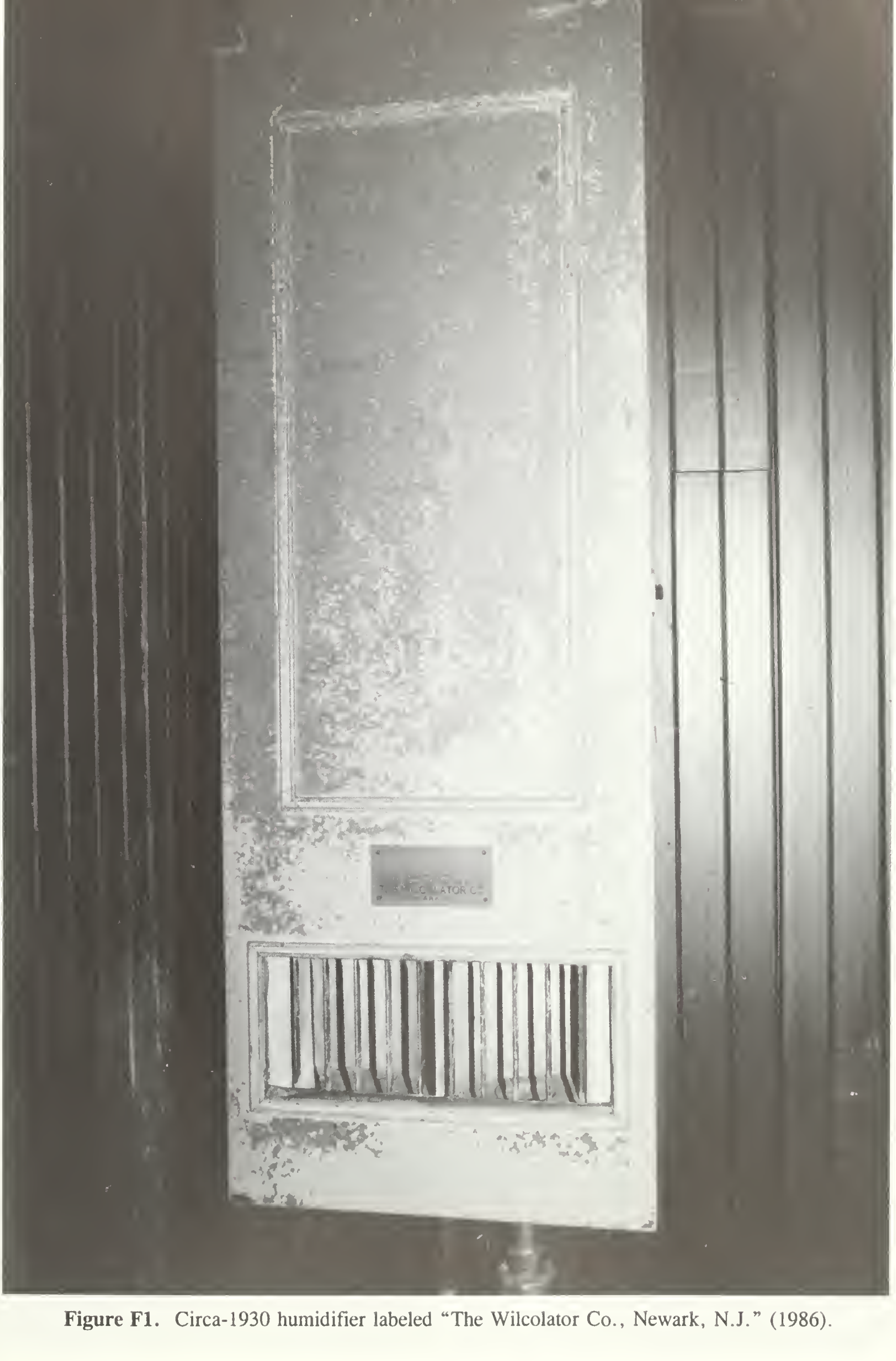


Figure F1. Circa-1930 humidifier labeled "The Wilcolator Co., Newark, N.J." (1986).

Fire-Protection System

In 1913-14, a Rockwood dry-pipe sprinkler and fire-alarm system was installed in the offices and in the house cellar. The only office area in which the sprinkler system was not installed was the brick Plans Vault. The Plans Vault was of fireproof construction, and if the system had malfunctioned, water would have damaged the drawings stored in the vault.

All of the piping for the sprinkler system was exposed, as was the wiring and equipment for the fire-alarm system. Figures F2-F4 show the piping routes. The piping was connected to the water main in the basement of the Planting Department. The sprinkler compressor was also located in this basement (figs. F5-F6). The original directions for the operation of the sprinkler hung beside the compressor (fig. F7). Figures F8-F10 show components of the fire-alarm system.

The Rockwood sprinkler system was a dry-pipe system, so that it could be installed in portions of the buildings where the temperature might fall below freezing. The pipes in this type of system are filled with air under moderate pressure. When a sprinkler head opens, air escapes, the valve holding back the water opens, and the system's pipes fill. As sprinkler heads open, due to an increase in temperature caused by a fire, water sprays from the heads to extinguish the fire.

In 1983 the original sprinkler system was extensively upgraded. A new compressor was installed, damaged piping was replaced, and all new sprinkler heads were installed. The system was also wired directly to the site's fire-alarm system, which is connected directly to the Brookline Fire Department.

The sprinkler system is directly connected to the Brookline City Water supply, as is the water supply for the site. (See also Volume 1, Chapter III, "The House: Physical History and Analysis, Existing Conditions: Utility Systems," for further information about the fire- and intrusion-alarm systems.)

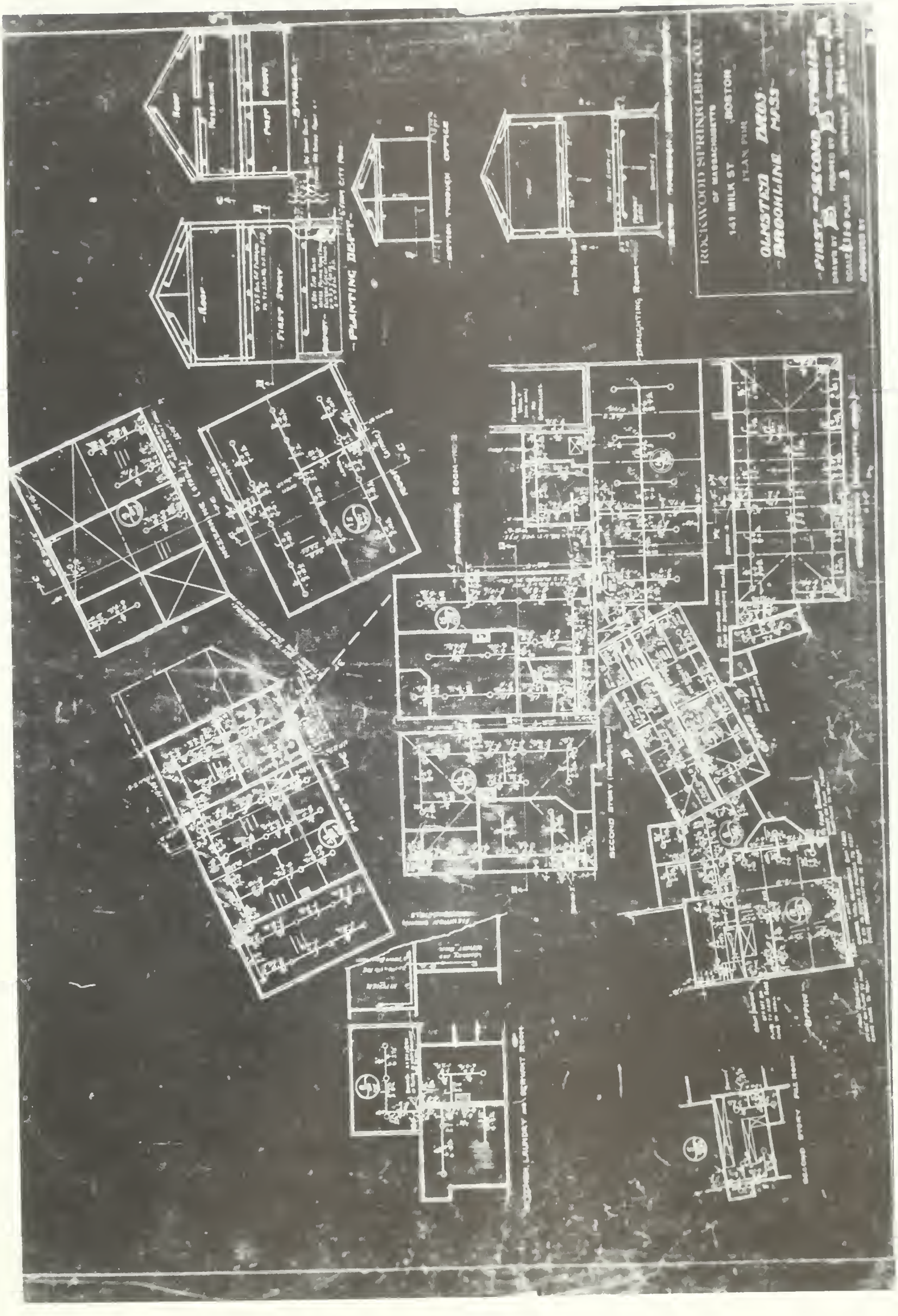


Figure F2. Sprinkler System: "First - Second Stories," 1913.

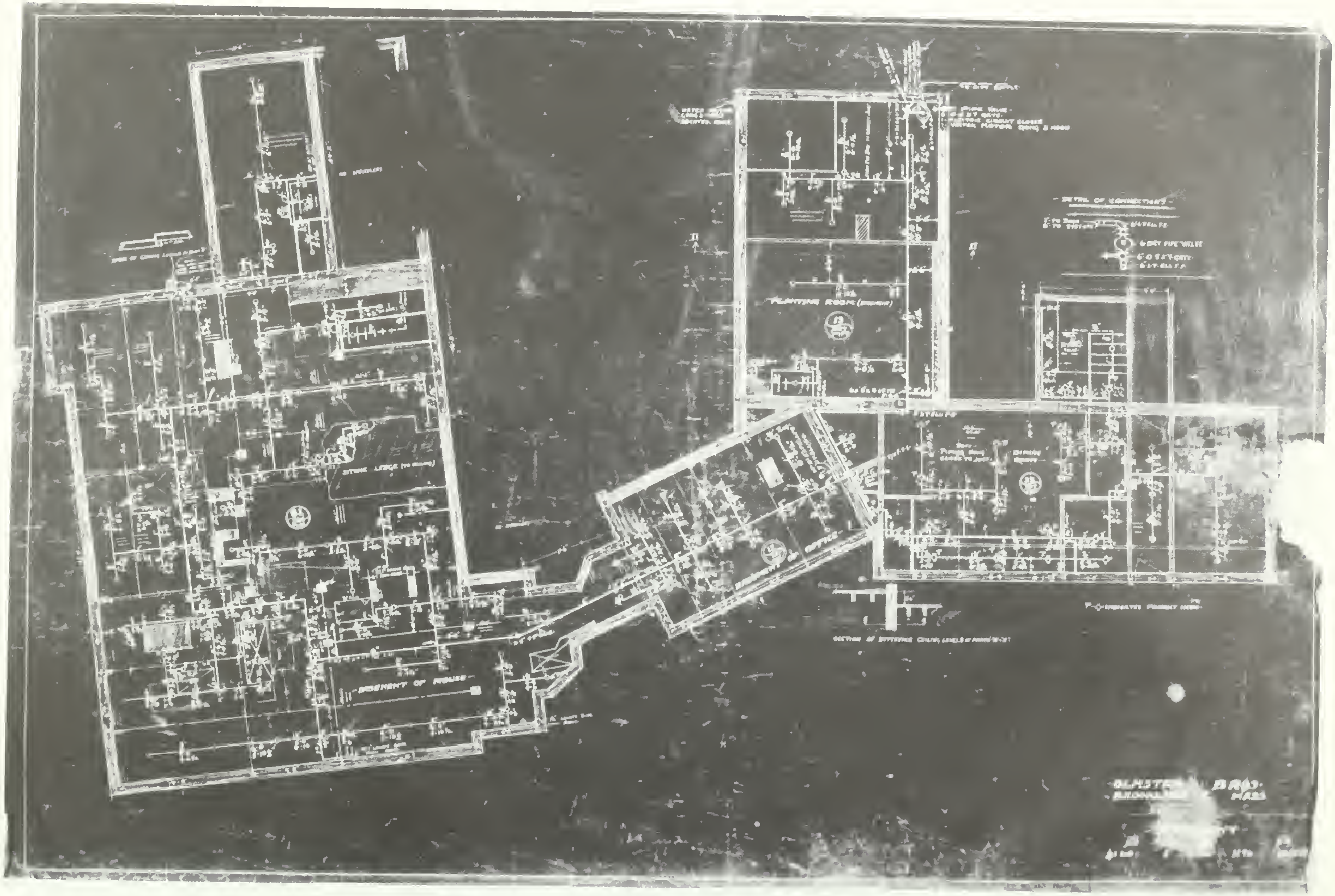


Figure F3. Sprinkler System: Basement, 1913.

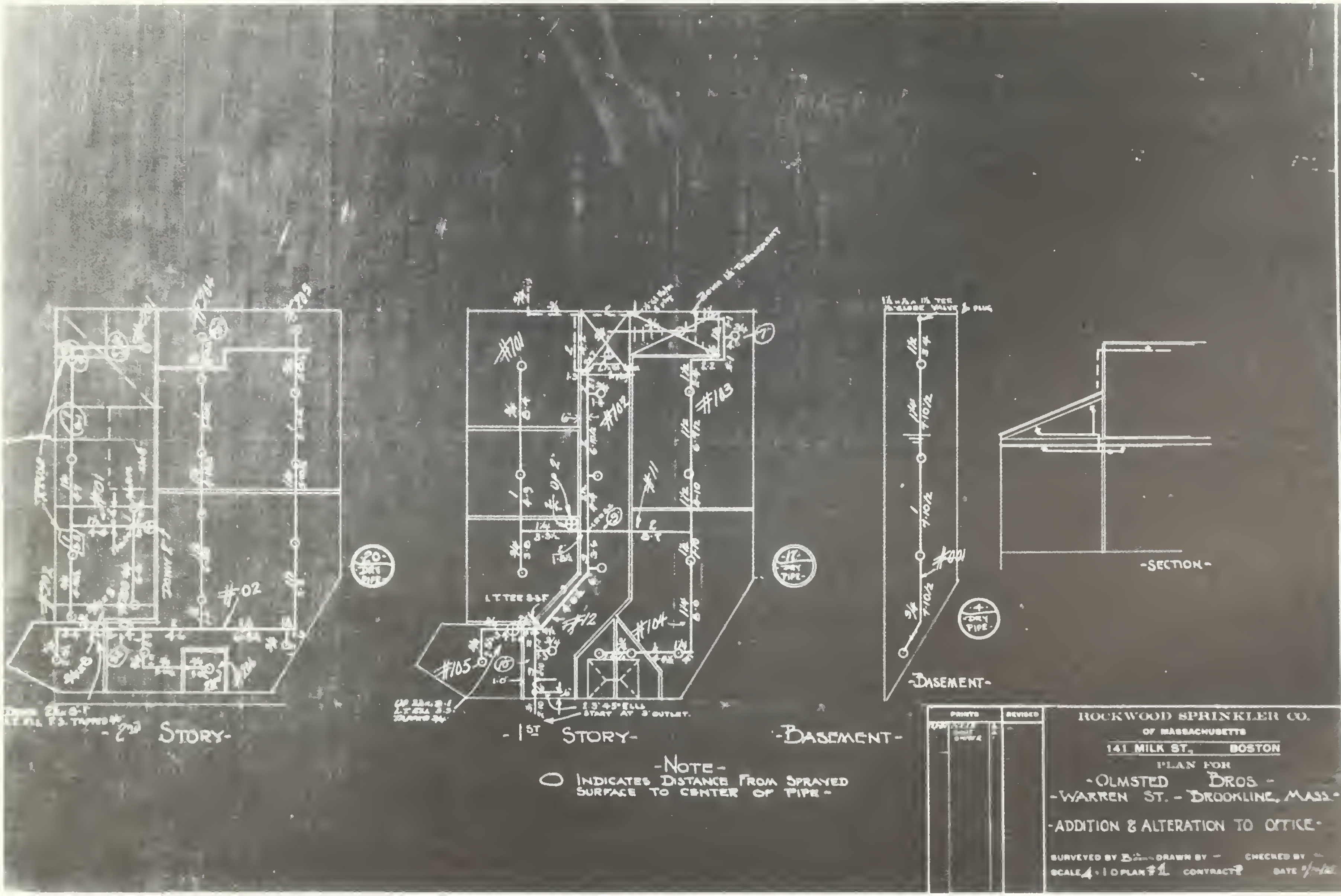
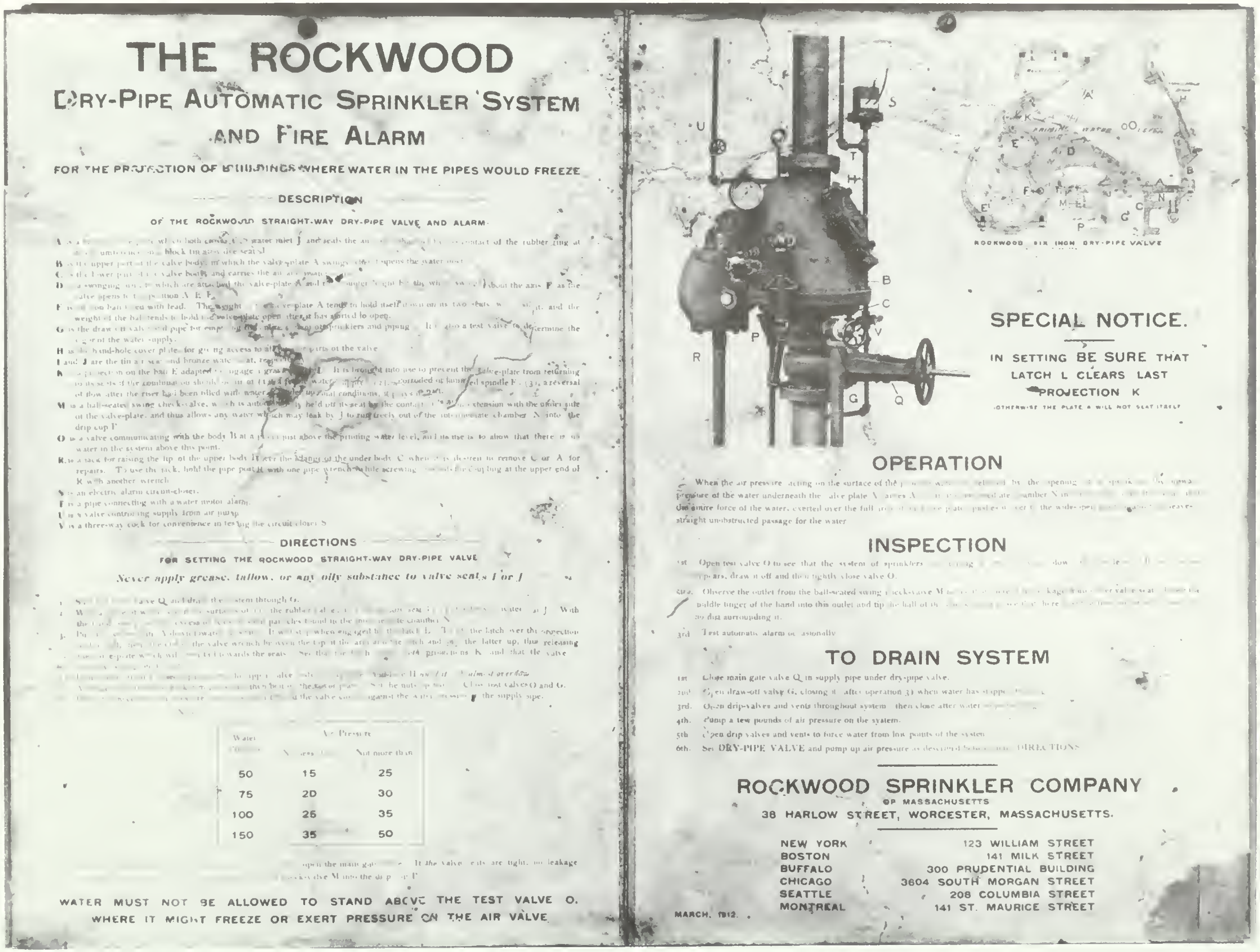


Figure F4. Sprinkler System: "Addition & Alteration to Office," 1913.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THE ROCKWOOD

DRY-PIPE AUTOMATIC SPRINKLER SYSTEM AND FIRE ALARM

FOR THE PROTECTION OF BUILDINGS WHERE WATER IN THE PIPES WOULD FREEZE

DESCRIPTION

OF THE ROCKWOOD STRAIGHT-WAY DRY-PIPE VALVE AND ALARM

A [illegible] which both covers the water inlet J and seals the air [illegible] contact of the rubber ring at [illegible] block tin [illegible] seat I.

B is the upper part of the valve body, in which the valve-plate A swings when it opens the water inlet.

C is the lower part of the valve body, and carries the air [illegible]

D [illegible] swinging [illegible] which are attached the valve-plate A and [illegible] about the axis F as the valve opens [illegible] position A' E' F.

E is [illegible] ball [illegible] with lead. The weight [illegible] valve-plate A tends to hold itself down on its two seats [illegible] and the weight of the ball tends to hold the valve-plate open after it has started to open.

G is the draw-off valve and pipe for emptying the [illegible] and piping. It is also a test valve to determine the [illegible] of the water supply.

H is the hand-hole cover plate for giving access to all [illegible] parts of the valve.

I and **J** are the tin air seat and bronze water seat, respectively.

K [illegible] projection on the ball E adapted to engage [illegible] L. It is brought into use to prevent the valve-plate from returning to its seats if the continuation [illegible] water supply [illegible] spindle F, (3), a reversal of flow after the riser had been filled with water [illegible] normal conditions [illegible]

M is a ball-seated swing check-valve, which is automatically held off its seat by the contact [illegible] extension with the under side of the valve-plate, and thus allows any water which may leak by J to run freely out of the intermediate chamber N into the drip cup P.

O is a valve communicating with the body B at a point just above the priming water level, and its use is to show that there is no water in the system above this point.

R is a rack for raising the lip of the upper body B over the flange of the under body C when it is desired to remove C or A for repairs. To use the rack, hold the pipe post R with one pipe wrench while screwing [illegible] coupling at the upper end of R with another wrench.

S is an electric alarm circuit-closer.

T is a pipe connecting with a water motor alarm.

U is a valve controlling supply from air pump.

V is a three-way cock for convenience in testing the circuit closer S.

DIRECTIONS

FOR SETTING THE ROCKWOOD STRAIGHT-WAY DRY-PIPE VALVE

Never apply grease, tallow, or any oily substance to valve seats I or J

1. [illegible] valve Q and drain the system through G.
2. [illegible] the rubber [illegible] water [illegible] J. With the [illegible] chamber N.
3. [illegible] the latch over the projection [illegible] the valve wrench [illegible] the latter up, thus releasing [illegible] towards the seats. [illegible] projections K and that the valve [illegible]

[illegible] almost overflow [illegible] Close test valves O and G. [illegible] the valve [illegible] against the water pressure in the supply pipe.

Water [illegible]	Air Pressure [illegible]	 Not more than
50	15	25
75	20	30
100	25	35
150	35	50

[illegible] open the main gate [illegible] If the valve seats are tight, no leakage [illegible] valve M into the drip cup P.

WATER MUST NOT BE ALLOWED TO STAND ABOVE THE TEST VALVE O.
WHERE IT MIGHT FREEZE OR EXERT PRESSURE ON THE AIR VALVE

ROCKWOOD SIX INCH DRY-PIPE VALVE

SPECIAL NOTICE.

IN SETTING BE SURE THAT
LATCH L CLEARS LAST
PROJECTION K
OTHERWISE THE PLATE A WILL NOT SEAT ITSELF

OPERATION

When the air pressure acting on the surface of the [illegible] by the opening [illegible] pressure of the water underneath the valve plate [illegible] chamber N [illegible] the entire force of the water, exerted over the full [illegible] the wide-open [illegible] straight unobstructed passage for the water.

INSPECTION

1st. Open test valve O to see that the system of sprinklers [illegible] appears, draw it off and then tightly close valve O.

2nd. Observe the outlet from the ball-seated swing check-valve M [illegible] middle finger of the hand into this outlet and tip the ball of [illegible] no dirt surrounding it.

3rd. Test automatic alarm occasionally.

TO DRAIN SYSTEM

1st. Close main gate valve Q in supply pipe under dry-pipe valve.

2nd. Open draw-off valve G, closing it after operation 3) when water has stopped [illegible]

3rd. Open drip-valves and vents throughout system, then close after water [illegible]

4th. Pump a few pounds of air pressure on the system.

5th. Open drip valves and vents to force water from low points of the system.

6th. Set DRY-PIPE VALVE and pump up air pressure as described [illegible] DIRECTIONS.

ROCKWOOD SPRINKLER COMPANY

OF MASSACHUSETTS
38 HARLOW STREET, WORCESTER, MASSACHUSETTS.

NEW YORK	123 WILLIAM STREET
BOSTON	141 MILK STREET
BUFFALO	300 PRUDENTIAL BUILDING
CHICAGO	3604 SOUTH MORGAN STREET
SEATTLE	208 COLUMBIA STREET
MONTREAL	141 ST. MAURICE STREET

MARCH, 1912.

Figure F5. Sprinkler System: Product literature, Rockwood Sprinkler Co., March 1912.

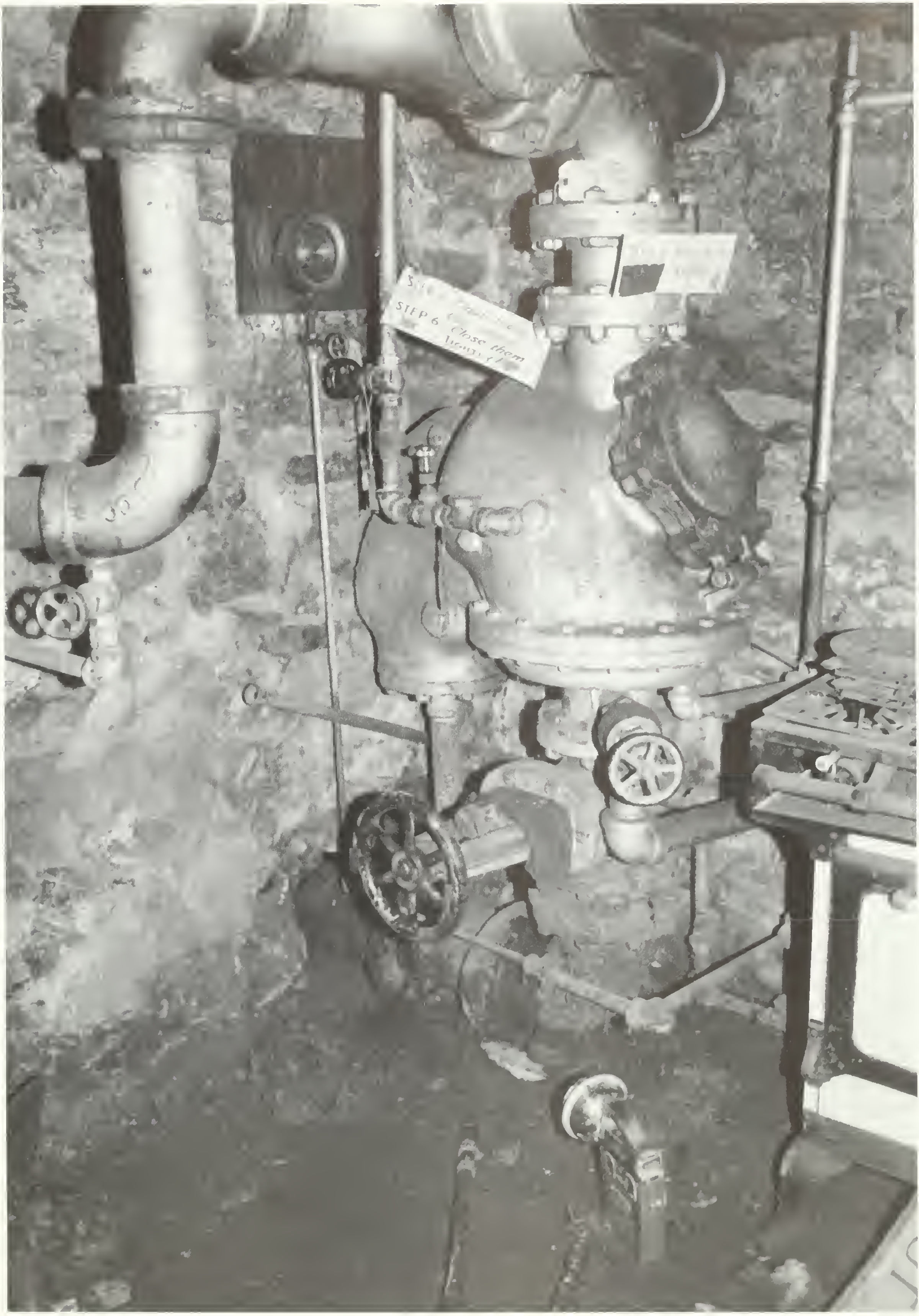

Figure F6. Sprinkler System: Circa-1914 apparatus in basement (1986).

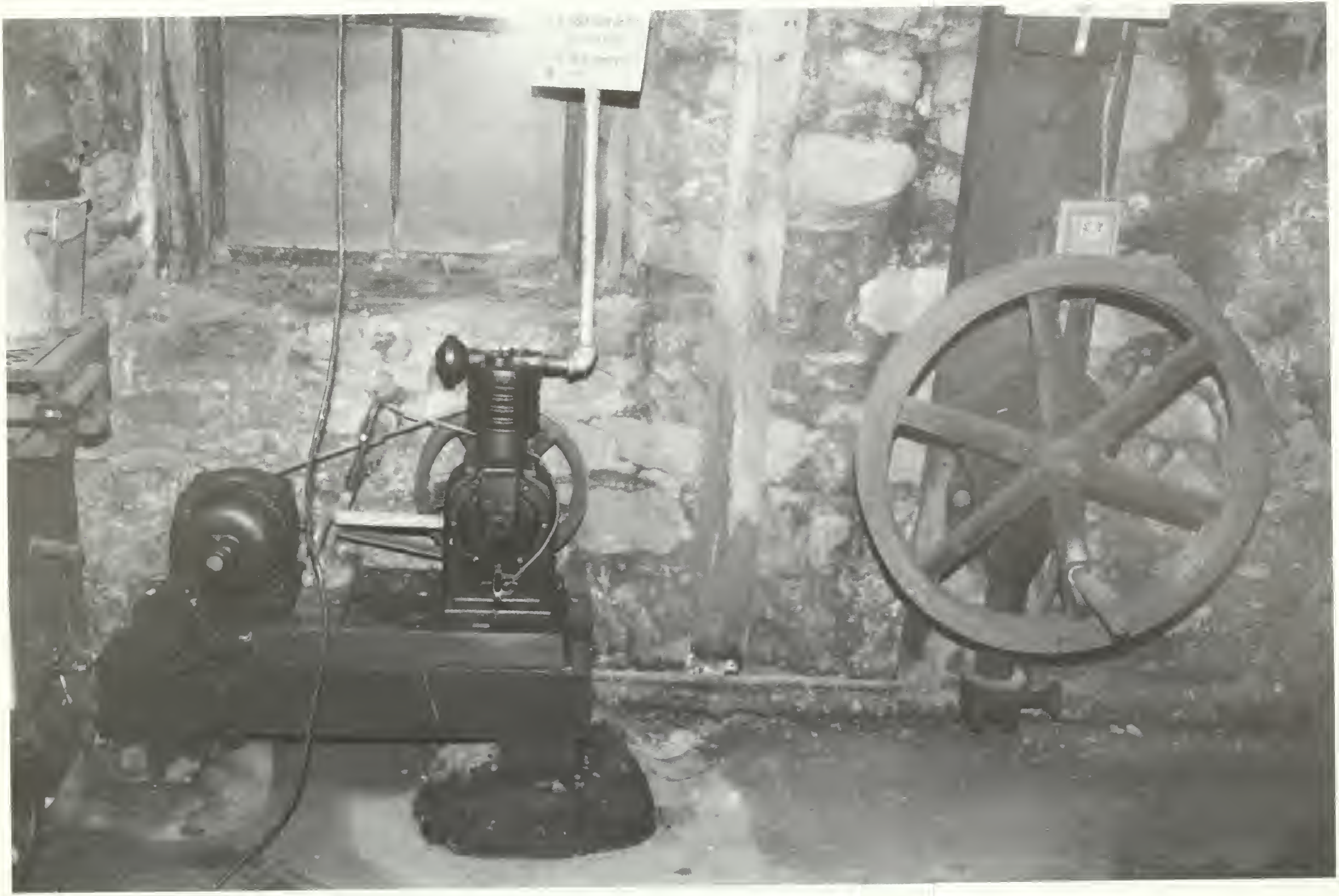

Figure F7. Sprinkler System: Circa-1913 apparatus in basement (1986).

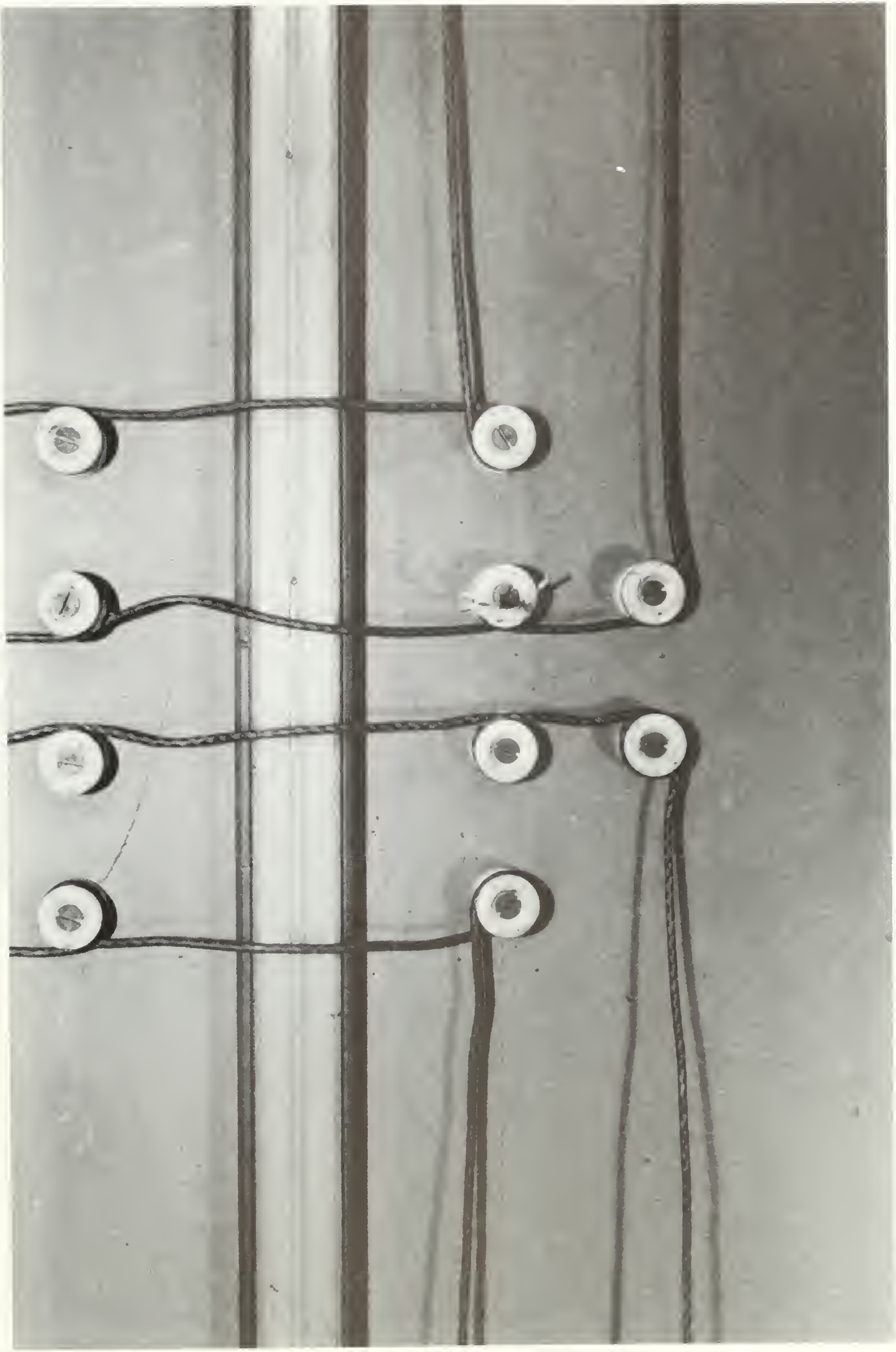

Figure F8. Circa-1913 wiring for fire alarm (1986).

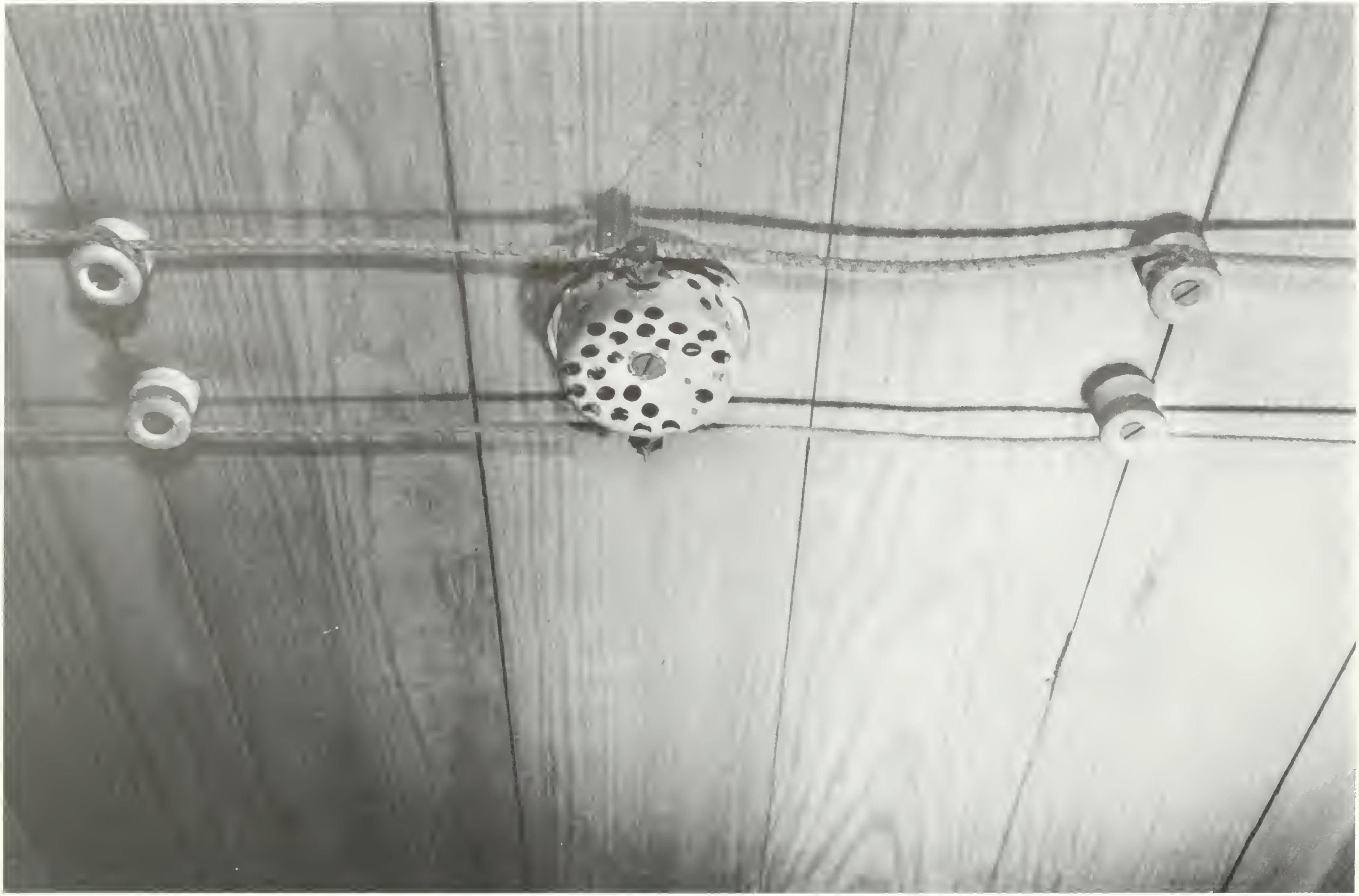

Figure F9. Circa-1913 smoke detector (1986).

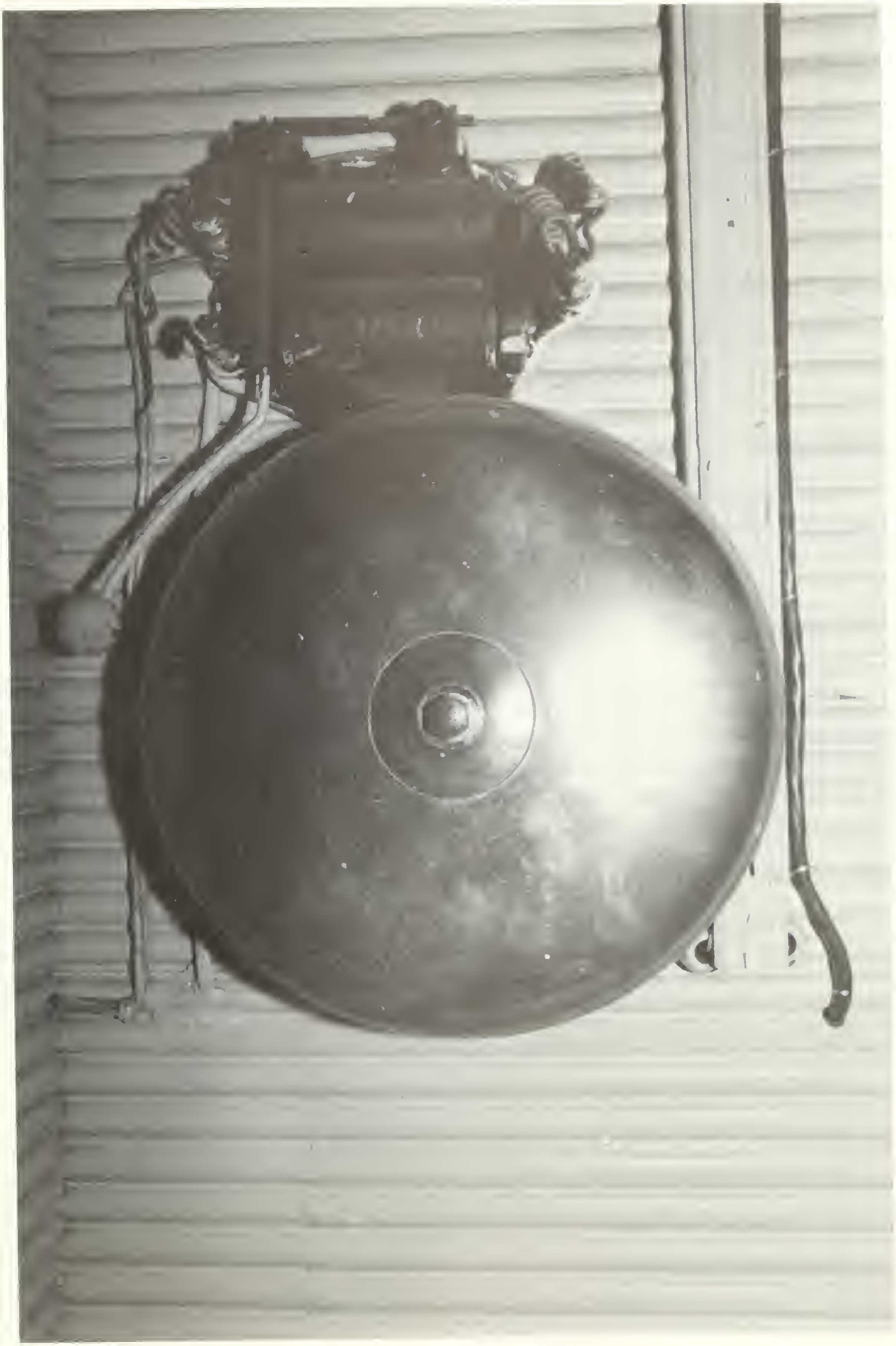

Figure F10. Circa-1913 fire-alarm bell (1986).

Plans Vault

The Plans Vault was renovated for archival storage use in 1984-1985. This required much more extensive work on the utility systems here than elsewhere in the offices. (See the previous section, "Offices: Physical History and Analysis, Plans Vault," for more information about this project.) All systems date to that renovation unless otherwise noted.

Heating, Ventilation, and Air-Conditioning Systems

The Plans Vault's environment is regulated by a "Hydro-therm" boiler and climate-control system that is separate from the other systems in the offices.

Electrical System

This is the one office structure that did not have its historic wiring and light fixtures retained and upgraded. The remodeling of this space for archival storage required the removal of the old equipment and the installation of a new lighting system.

Fire-Suppression System

The Rockwood dry-pipe sprinkler system was not installed in the Plans Vault when it was introduced elsewhere at Fairsted in 1914. This was probably because the Plans Vault was of fireproof construction, and the risk of fire was less than the risk of water damage to the drawings stored in the vault from a system malfunction. Today, the Plans Vault and its contents are protected from fire by a side-wall halon system.

Storage System

In addition to producing the plans and specifications for the renovation of the vault, the firm of Crissman and Solomon designed the components of the new archival storage system. The installation of the new storage system was to be accomplished over time, as budgetary constraints allowed. Figure 32 shows the partially completed shelving as of 1989-1990. The actual installation of the shelving is being accomplished by National Park Service employees.

Editor's note: the renovation of the Plans Vault was completed in 1995.

APPENDIX G.

Supporting Documents

G1. Building Permits. . . . . page 239
G2. Appraisal of Personal Property. . . . .page 247
G3. Patents for Printing Equipment. . . . .page 263

G1. Building Permits

a permit for erection will be granted.

No. ....

Application for Permit to Build.

(WOOD AND FRAME.)

Brookline, Oct 10 1889

To the
INSPECTOR OF BUILDINGS:

The undersigned hereby applies for a permit to build, according to the following specifications:—

1. Is the building in a block or separate? Addition to House ....Block of ....
2. Material, Wood
3. What is the name of Owner? Fredrick Law Olmsted
4. " " " Architect? " " "
5. " " " Builder? B McNeely
6. " " Location? Corner Warren & Dudley St
7. " " nearest street? ....
8. " " purpose of building? Room for drafting purposes
9. If a dwelling, for how many families? ....
10. Is there to be a store in the lower story? ....
11. Size of lot, No. of feet front, ... ; No. of feet rear, ... ; No. of feet deep, ...
12. The height the level of building lot above the grade of street is .... feet.
13. Size of building, No. of feet front, 13 .... ; No. of feet rear, 13 .... ; No. of feet deep, 33
14. No. of stories, one story
15. No. of feet in height from level of ground to highest part of roof? 16 ft
16. Does the proposed structure stand within 18 inches of the lines of adjoining premises? No .... distance ....
If so, what is the thickness of the wall to be built? ....
17. Distance from surrounding buildings, front, ... feet; side, ... feet; side, ... feet; rear, ... feet.
18. Distance back from line of street? ....
19. What is the height of the nearest building? ....
20. Will the building be erected on solid or filled land? Solid Rock
21. Will the foundation be laid on earth, rock, timber or piles? ....
22. What is the material of foundation? Stone
23. Will the roof be flat, pitch or mansard? Pitch
24. Will the building be heated by steam, furnaces, stoves or grates? .... Thickness of flue, ...
25. Will the building conform to the requirements of the law? it will
26. Number of brick walls, ... and where placed? ....

Plans submitted? ....

Show by diagram the location of proposed building, with relation to distances from adjoining lots.

Separate application required for every building

Name, B McNeel

Address, Brookline

.... of sidewalk........ cartway wanted.

Plans must be submitted and approved by this Department before
a permit for erection will be granted.

No.

Application for Permit to Build.

(WOOD AND FRAME.)

Brookline, July 16 1891

To the
INSPECTOR OF BUILDINGS:

The undersigned hereby applies for a permit to build, according to the following specifications :—

1. Is the building in a block or separate? Separate Block of
2. Material, Wood
3. What is the name of Owner? F. L. Olmstead Bro
4. " " " Architect? F.L.
5. " " " Builder? B. W. Neal Jr
6. " " Location? Dudley St.
7. " " nearest street?
8. " " purpose of building? Drafting Office
9. If a dwelling, for how many families?
10. Is there to be a store in the lower story?
11. Size of lot, No. of feet front, — ; No. of feet rear, — ; No. of feet deep, —
12. The height the level of building lot above the grade of street is feet.
13. Size of building, No. of feet front, 20 ; No. of feet rear, 20 ; No. of feet deep, 42-2
14. No. of stories, one
15. No. of feet in height from level of ground to highest part of roof? 19 ft.
16. Does the proposed structure stand within 18 inches of the lines of adjoining premises? No. distance
If so, what is the thickness of the wall to be built?
17. Distance from surrounding buildings, front, feet; side, feet; side, feet; rear, feet.
18. Distance back from line of street? 4 ft
19. What is the height of the nearest building? 24.
20. Will the building be erected on solid or filled land? solid.
21. Will the foundation be laid on earth, rock, timber or piles? Earth.
22. What is the material of foundation? Stone
23. Will the roof be flat, pitch or mansard? Hip
24. Will the building be heated by steam, furnaces, stoves or grates? Steam Thickness of flue,
25. Will the building conform to the requirements of the law? Yes
26. Number of brick walls, and where placed?

Separate application required for every building.

Plans submitted?

Show by diagram the location of proposed building, with relation to distances from adjoining lots.

Name, B. W. Neal Jr.
Address, Brookline.

of sidewalk cartway wanted.

Location, ownership and detail must be complete and legible.
Separate application required for every building.

No.

Application for Permit for Alterations, Etc.

Brookline, Dec 12th 1899.

To the
INSPECTOR OF BUILDINGS:

The undersigned applies for a permit to alter the following described

Building :—
Location, Cor Warren & ~~[illegible]~~ Dudley St

Name of owner, F. L. Olmstead Name of occupant, Olmstead Bros

Name of mechanic, [illegible] Name of architect, " "

Material,

Size of building, No. feet front, ; feet rear, ; feet deep, ; No. of Stories,

Size of L, feet long ; feet wide ; feet high ; No. of stories, ; roof,

No. of feet in height from sidewalk to highest point of roof,

Style of roof, Material of roofing,

Material of foundation, Distance from line of street,

Thickness of external walls, inches. Thickness of party walls, inches.

How is the building occupied? For what purpose built?

If a dwelling, by how many families? Number of stores in lower story?

Hoistways and elevators? How protected?

DETAIL OF PROPOSED ALTERATIONS, ETC.

Build an addition 25 x 36 2½ stories hip roof stone foundation. sheathed [illegible]. to have one Chimney and be heated with steam To be used as a [illegible] office

IF EXTENDED ON ANY SIDE.

Size of extension, No. of feet long, ; No. of feet wide, ; No. of feet high above sidewalk,

No. of stories high, ; style of roof ; Material of roofing,

Of what material will the extension be built? Foundation,

If of brick, what will be the thickness of external walls? inches ; and party walls, inches.

Will the extension be placed within ten feet of the present, or proposed street line?

How will the extension be occupied? Connection with main building?

Distance from surrounding buildings :—

Front, feet ; side, feet ; side, feet ; rear, feet.

What distance from the lines of the adjoining lots will it be placed?

IF MOVED, RAISED OR BUILT UPON.

Number of stories high of when moved, raised or built upon Proposed foundation,

Number of feet high from level of ground to highest part of roof,

Distance from surrounding buildings :—

Front, feet ; side, feet ; side, feet ; rear, feet

Distance back from line of street, Distance from nearest line of lot,

Will the roof be flat, pitch, hip or mansard? ; What will be the material of roofing?

How many feet will the external wall be increased in height?

How many feet will the party walls be increased in height?

How will the building be occupied after alteration?

IF ANY PORTION OF THE EXTERNAL OR PARTY WALLS ARE REMOVED.

Will an opening be made in the party or external walls? on story

What will be the size of the opening? feet wide ; feet high ;

How will the remaining portion of the wall be supported?

If by iron or stone lintels, give size,

If iron columns are used, give diameter, inches ; and thickness of shell, inches

If brick piers are used, give size,

No.

Application for Permit for Alterations, Etc.

Brookline, June 21 1911

To the
BUILDING COMMISSIONER:

The undersigned applies for a permit to add to the following described

Building: —
Location, 99 Warren St cor Dudley Street.

Name of owner, John C. Olmstead Name of occupant, owner
Name of mechanic, Name of architect, owner
Material, wood
Size of building, No. feet front, ; feet rear, ; feet deep, — ; No. of stories, 2
Size of L, feet long ; feet wide ; feet high ; No. of stories, ; roof,
No. of feet in height from sidewalk to highest point of roof, 15'
Style of roof, hip Material of roofing, shingles
Material of foundation, stone Distance from line of street, 30 ft
Thickness of external walls, inches. Thickness of party walls, inches.
How is the building occupied? offices For what purpose built? offices
If a dwelling, by how many families? none Number of stores in lower story? none
Hoistways and elevators? — How protected? —

DETAIL OF PROPOSED ALTERATIONS, ETC.

Build addition on rear one story making building of two stories 21 X 42'

IF EXTENDED ON ANY SIDE.

Size of extension, No. of feet long, 21' ; No. of feet wide, 42' ; No. of feet above sidewalk,
No. of stories high, 2 ; Style of roof, hip ; Material of roofing,
Of what material will the extension be built? wood Foundation, —
If of brick, what will be the thickness of external walls? — inches; and party walls, — inches.
Will the extension be placed within ten feet of the present, or proposed street line? no
How will the extension be occupied? offices Connection with main building? yes
Distance from surrounding buildings: —
Front, feet; side, feet; side, feet; rear, feet.
What distance from the lines of the adjoining lots will it be placed?

IF MOVED, RAISED OR BUILT UPON.

Number of stories high of when moved, raised or built upon Proposed foundation,
No. of feet high from level of ground to highest part of roof?
Distance from surrounding buildings: —
Front, feet; side, feet; side, feet; rear, feet.
Distance back from line of street, Distance from nearest line of lot,
Will the roof be flat, pitch, hip or mansard? What will be the material of roofing?
How many feet will the external wall be increased in height?
How many feet will the party walls be increased in height?
How will the building be occupied after alteration?

IF ANY PORTION OF THE EXTERNAL OR PARTY WALLS ARE REMOVED.

Will an opening be made in the party or external walls? on story.
What will be the size of the opening? feet wide; feet high.
How will the remaining portion of the wall be supported?
If by iron or stone lintels, give size,
If iron columns are used, give diameter, inches; and thickness of shell, inches.
If brick piers are used, give size,

Location, ownership and detail must be complete and legible.
Separate application required for every building.

No.

Application for Permit for Alterations, Etc.

Brookline, Sept 13 1912

To the
BUILDING COMMISSIONER:

The undersigned applies for a permit to the following described

Building: —
Location, Dudley St

Name of owner, Olmsted Bros Name of occupant, Olmsted Bros
Name of mechanic, George A. Stewart Name of architect,
Material, Brick
Size of building, No. feet front, 18 ; feet rear, 31 ; feet deep, ; No. of stories,
Size of L, feet long ; feet wide ; feet high ; No. of stories, ; roof,
No. of feet in height from sidewalk to highest point of roof, 24'
Style of roof, Pitch Material of roofing, wood
Material of foundation, Distance from line of street, 11'
Thickness of external walls, 12 inches. Thickness of party walls, inches.
How is the building occupied? For what purpose built? Vault
If a dwelling, by how many families? Number of stores in lower story?
Hoistways and elevators? How protected?

DETAIL OF PROPOSED ALTERATIONS, ETC.

Raise present roof 12' build up brick walls to same with Brick & Iron roof under wood roof

IF EXTENDED ON ANY SIDE.

Size of extension, No. of feet long, ; No. of feet wide, ; No. of feet above sidewalk,
No. of stories high, ; Style of roof, ; Material of roofing,
Of what material will the extension be built? Foundation,
If of brick, what will be the thickness of external walls? inches; and party walls, inches.
Will the extension be placed within ten feet of the present, or proposed street line?
How will the extension be occupied? Connection with main building?
Distance from surrounding buildings: —
Front, feet; side, feet; side, feet; rear, feet.
What distance from the lines of the adjoining lots will it be placed?

IF MOVED, RAISED OR BUILT UPON.

Number of stories high of when moved, raised or built upon 3 Proposed foundation, Stone
No. of feet high from level of ground to highest part of roof? 29'
Distance from surrounding buildings: —
Front, feet; side, feet; side, feet; rear, feet.
Distance back from line of street, Distance from nearest line of lot,
Will the roof be flat, pitch, hip or mansard? Pitch What will be the material of roofing? Wood
How many feet will the external wall be increased in height? 12'
How many feet will the party walls be increased in height?
How will the building be occupied after alteration? Vault

IF ANY PORTION OF THE EXTERNAL OR PARTY WALLS ARE REMOVED.

Will an opening be made in the party or external walls? on story.
What will be the size of the opening? feet wide; feet high.
How will the remaining portion of the wall be supported?
If by iron or stone lintels, give size,
If iron columns are used, give diameter, inches; and thickness of shell, inches.
If brick piers are used, give size,

Location, ownership, and detail must be complete and legible.
Separate application required for every building.

No. 147

Application for a Permit for Alterations, etc.

Brookline, October 2 1925

To the BUILDING COMMISSIONER:

The undersigned applies for a permit to Alter and extend the following described building:—

Location, 99 Warren St corner of Dudley

Name of owner, Estate of Frederick Law Olmsted Name of occupant, Olmsted Brothers

Name of mechanic George A. Stewart Name of architect, Olmsted Brothers

Estimated cost of alterations, etc. $ 3500.00 Material, Wood

Size of building, No. feet front, ; feet rear, ; feet deep, ; No. of stories, Two

Size of L feet long; feet wide; feet high; No. of stories ; roof,

No. of feet in height from sidewalk to highest point of roof, Twenty-eight

Style of roof, Pitch Material of roofing, wood shingles

Material of foundation, Stone Distance from line of street, Eighty ft Warren St

Thickness of external walls, Six inches; Thickness of party walls, inches.

How is the building occupied? Clerical For what purpose built? Clerical

If a dwelling, by how many families? No. of stores in lower story?

Hoistways and elevators? None How protected Sprinkler + Thermostatic system

DETAIL OF PROPOSED ALTERATIONS, ETC.

Moving out rear wall 6-10" and raising part of old and all of new to two stories. Building Brick fire wall between the two buildings on the North West end of the one altered

IF EXTENDED ON ANY SIDE

Size of extension, No. of feet long 23-0"; No. of feet wide 6-10"; No. of feet above sidewalk

No. of stories high 2; Style of roof Flat; Material of roofing Tar and gravel

Of what material will the extension be built? Wood Foundation Stone + Brick

If of brick, what will be the thickness of external walls? inches; and party walls inches.

Will the extension be placed within ten feet of the present, or proposed street line? No

How will the extension be occupied? Clerical Connection with main building?

Distance from surrounding buildings:—

Front, None feet; side Joining feet; side Joining feet; rear fifty five feet.

What distance from the lines of the adjoining lots will it be placed? 200 feet

IF MOVED, RAISED, OR BUILT UPON

No. of stories high of when moved, raised, or built upon Proposed foundation

No. of feet high from level of ground to highest part of roof? Twenty two

Distance from surrounding buildings:—

Front, None feet; side, Joining feet; side, Joining feet; rear fifty five feet.

Distance back from line of street, Eighty Distance from nearest line of lot, 200

Will the roof be flat, pitch, hip, or mansard? What will be the material of roofing? Tar and gravel

How many feet will the external wall be increased in height? 9½ ft

How many feet will the party walls be increased in height?

How will the building be occupied after alteration? Clerical first floor Library second floor

IF ANY OF THE EXTERNAL OR PARTY WALLS ARE REMOVED

Will an opening be made in the party or external walls? on story.

What will be the size of the opening? feet wide; feet high.

How will the remaining portion of the wall be supported?

If by iron or stone lintels, give size,

If iron columns are used, give diameter, inches; and thickness of shell, inches.

If brick piers are used, give size,

(OVER)

G2. Appraisal of Personal Property
Olmsted Brothers

May 25, 1918

APPRAISAL OF PERSONAL PROPERTY
BELONGING TO MESSRS. OLMSTED BROTHERS
AT 99 WARREN STREET, BROOKLINE, MASS.

May 25, 1918.

Reproduced from the collections in the Manuscript Division, Library of Congress

FRONT OFFICE:

Butternut cabinet	$2.00
Flat Top writing desk	7.00
Oak flat top desk	12.00
Butternut table	5.00
Oak typewriter desk	8.00
Drawing table	12.00
2 Oak office chairs	16.00
Oak Morris chair	5.00
Side chair	4.00
Oak typewriter chair	2.00
2 Swivel chairs	3.00
Ash side chair	.75
Oak typewriter chair	2.50
Step ladder chair	.50
Typewriter #10 Smith	40.00
Butternut cabinet with drawers	4.00
" " " "	4.00
Oak filing box	3.00
Cherry table	2.00
Butternut book case	8.00
" " "	6.00
Nest of book cases	25.00
Wall clock	12.00
F.L.O's framed photo	5.00
Water color of Siguanea	10.00
4 Framed prints and photos	2.00
4 Portable electric desk lamps	10.00
5 Letter trays	2.50
3 Waste baskets	.75
Safe	150.00
Electric Fan	12.00
2 Coal hods	4.00
	~~$385.00~~
	$380.00

HOUSE ROOM:

Swivel office chair	$1.50 ✓
Stool	.75 ✓
Drawing table and horses	7.00 ✓
	$9.25

PHOTO DEPARTMENT:

Wall cabinet of drawers	$30.00 ✓
" " " "	20.00 ✓
Films	5.00 ✓
Plates	8.00 ✓
2 Cupboards	16.00 ✓
Stool and basket and 2 tables	1.50 ✓
Shelving and cabinet	5.00 ✓
Oak filing cabinet	3.00 ✓
Foreign photos	50.00 ✓
Client photos	75.00 ✓
Large photos - Closet	25.00 ✓
	$238.50

LETTER FILE ROOM:

2 Time stamps and clock	$25.00 ✓
5 Oak filing cabinets	30.00 ✓
Portable desk light	3.50 gone — omit
Oak drop leaf table	2.00 ✓
2 File cabinets	16.00 ✓
1 Small cabinet	4.00 ✓
Swivel office chair	1.50 ✓
Pine table	1.00 ✓
Directory and table	2.50 ✓
Supply cabinet	4.00 ✓
4 Oak filing cabinets	24.00 ✓
Small electric fan	3.00 ✓
Filing cabinet	2.50 ✓
2 Waste baskets	.50 ✓
1 Typewriter desk	2.00 ✓
Fisher typewriter	65.00 ✓
1 Water color	6.00 ✓
1 Bag	1.00 ✓
1 "	2.00 ✓
Electric fan	10.00 ✓
	$205.50

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MISS OBST'S COOP:

Typewriter desk	$4.00 ✓
1 Remington typewriter #10	40.00 ✓
1 Swivel typewriter chair	2.50
Electric fan	4.00 ✓
2 Wire letter trays and 1 oak	1.00 ✓
Waste basket and chair	.50 ✓
2 Framed photos	2.00 ✓
	$54.00

TELEPHONE COOP:

Pine table	$1.50 ✓
Swivel chair and basket	3.00 ✓
Typewriter	40.00 ✓
Electric fan	4.00 ✓
	$48.50

LOBBY:

2 Fire extinguishers	$16.00 ✓
Jute door mat	2.50 ✓
Woven fire hose	2.00 ✓
Umbrella stand and swivel arm chair	2.00 ✓
1 framed panel photo	2.50 ✓
	$25.00

BOOKKEEPER'S ROOM:

Drop leaf table	$5.00 ✓
8 Rush seat chairs	4.00 ✓
Ash table	.50 ✓
Clock	2.00 ✓
Framed Etching	5.00 ✓
Framed water color	2.00 ✓
3 Filing boxes	6.00 ✓
Wardrobe	3.00 ✓
Electric fan	10.00 ✓
Drop leaf Oak typewriter table	2.00 ✓
Oak flat top table	30.00 ✓
2 Remington typewriters	100.00 ✓
Burrage adding machine and stand	100.00 ✓
Check protector	18.00 ✓
Oak typewriter table	2.00 ✓
2 Swivel chairs	5.00 ✓
Small table	1.50 ✓
Electric fixtures	7.50 ✓
	$303.50

LADIES KITCHEN:

Kitchen cabinet	$5.00
Crockery and dishes	2.00
Ice Chest	2.00
Gas range	3.00
	$12.00

LONG HALL:

Rubber strip	$4.00
Oak typewriter desk	12.00
Smith typewriter #10	40.00
Typewriter desk	4.00
2 typewriter chairs	5.00
Swivel office chair	1.50
3 revolving stools	10.50
3 drawing tables	30.00
Electric fan	10.00
2 Ceiling electric fixtures	8.00
2 Wall electric fixtures	5.00
2 Letter trays	1.00
3 Frames of photos	2.00
1 Framed panel photo	4.00
	$137.00

P. G. COOP:

Pine desk and file	$4.00
Swivel office chair	2.50
Bentwood cane chair	1.00
3 framed pictures	5.00
1 Waste basket	.50
	$13.00

MAIN DRAFTING ROOM:

Shipping table with drawers	$8.00
Oak table with drawers	1.00
Hamper waste baskets	3.00
Drawing table and horse	20.00
1 Swivel stool	.50
2 " "	2.00
1 Swivel high chair	2.00
1 " " "	2.50

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MAIN DRAFTING ROOM: continued:

2 Waste baskets	$1.00	✓
2 Ceiling ext. electric lights	8.00	✓
1 Electric fan	5.00	✓
4 Framed photos and maps	6.00	✓
Telephone booth	15.00	✓
3 Section Steel filing section	30.00	✓
Pencil sharpener	.50	✓
Fairbank scales	4.00	✓
Pelouze Parcel Post scales	5.00	✓
Butternut cabinet	8.00	✓
Fire hose	3.00	✓
2 Fire extinguishers	16.00	✓
Shelving	3.00	✓
Portable electric light	3.00	✓
Tracing cloth wall cabinet	4.00	✓
1 - 36' reels	3.00	✓
1 - 18' reels	2.75	✓
1 - 42" reels wrapping paper	4.00	✓
Clock	10.00	✓
1 - 36" Detailed paper	10.00	✓
Shelving	1.50	✓
2 Reels twine	5.00	✓
Electric fixtures	.75	✓
Time Bell	4.00	✓
1 Swivel chair	1.00	✓
5 Drawing boards	10.00	✓
5 Drawing tables and horses	40.00	✓
2 Swivel high chairs 7 Swivel stools	13.00	✓
3 Waste baskets	.75	— gone - omit
2 Electric fans	20.00	✓
4 Paper cabinets	8.00	— 2
5 Framed photos	5.00	✓
5 ext. ceiling electric lights	20.00	✓
2 Thermometers (self recording)	16.00	✓
5 frames print and photos	5.00	✓
Drawing tools	3.00	✓
Protracters	3.00	✓
Pantograph	10.00	✓
Ducks	2.50	✓
Oak filing cabinet	4.00	✓
Oak desk and letter cabinet	6.00	✓
Stool and basket	.50	✓

MAIN DRAFTING ROOM: continued:

Butternut cabinet and drawers	$4.00 ✓
Large filing cabinet	8.00 ✓
Oak filing cabinet with 4 drawers (large)	6.00 ✓
Large filing cabinet with drawers	11.00 ✓
Steel flat file	40.00 ✓
Oak file cabinet	6.00 ✓
Steel file cabinet	10.00 ✓
	$444.25 –

PLANTING DEPARTMENT:

Hamper	$ .50 ✓
3 Section of 4 draw	18.00 ✓
Pine wall cabinet glass door with base	9.00 ✓
1 Drawing table with horses	12.00 ✓
3 " " " "	24.00 ✓
6 Drawing boards	12.00 ✓
4 Extension ceiling drop lights	16.00 ✓
2 Ceiling electric fans	20.00 ✓
7 Stools	9.00 ✓
4 Waste baskets	1.50 ✓
10 Pictures	2.50 ✓
12 framed plans	15.00 ✓
3 Foot stools	4.00 ✓
	$143.50

PLANTING DESK ROOM:

Wall shelving with cabinets	$40.00 ✓
3 Flat top desks	12.00 gone to [illegible]
3 Swivel office arm chairs	7.50 ✓
2 Stools and 2 waste baskets	2.00 ✓
3 Oak filing cabinets	18.00 ✓
Drawing board and horses	8.00 ✓
2 Ceiling electric drop lights	6.00 ✓
5 Other drop electric lights	5.00 ✓
1 Electric fan	6.00 ✓
Electric Burroughs adding machine	250.00 ✓
Typewriter, desk and chair	12.00 ✓
Typewriter	40.00 ✓
2 Framed photos	3.00 ✓
	$409.50

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J. F. D. COOP:

Desk	$4.00
2 Swivel office chairs	5.00
Letter files	2.50
Electric fan	6.00
2 Drop lights	1.50
Waste basket	.25
	$19.25

CUPBOARD:

Toilet paper	$2.00
Soap	5.50
Towels	7.50
Chalk	.50
Burlap	2.00
	$17.50

PRINT ROOM:

Drawing table	$ 7.00
" "	10.00
6 Stools	4.50
5 Baskets	1.00
3 Mounting tables	12.00
9 Stretchers	9.00
Gas stove	1.00
Hose	3.00
Printing Press	25.00
Wall cabinet	15.00
3 Ceiling drop lights	12.00
1 Ceiling fan	10.00
1 Fire extinguisher	8.00
1 Drawing board	3.00
9 Framed photos and prints	6.00
Small print frame	15.00
Exhaust print frame	30.00
Electric exhaust tank and machine	25.00
Electric blue machine	125.00
Wall cabinet	2.00
Cabinet	1.50
6 Framed prints etc.	12.00
Shelving and drawers, closet	10.00
	$347.00

Shelving and drawers - arch. closet	$3.00	
	$3.00	

ARCH DEPARTMENT:

3 Drawing tables and horses	$36.00	
4 " "	32.00	
1 " "	6.00	
11 Swivel stools	10.00	
7 Waste baskets	3.00	
4 Drawing boards	8.00	
11 Ceiling electric drop lights	44.00	
3 Electric fans	30.00	
1 Fire extinguisher	8.00	
2 " "	6.00	Change 3.00
3 Fold screens	2.50	
Pine table	2.00	
2 Wall cabinets	3.00	
2 Sets of shelving	11.00	
5 Framed photos	1.25	
	$202.75	

UPPER VAULT:

14 Oak filing cabinets	$70.00
1 Oak " cabinet	6.00
1 " " "	12.00
9 Steel filing cabinets	72.00
1 Electric drop light	2.00
Shelving	12.00
Diamond scales	15.00
Plane table survey	20.00
2 Surveyor's instrument	150.00
	$359.00

ARCH DEPARTMENT:

10 Volumes Encyclopedia of architecture	10.00
Italian Villas by Guy Lowell	8.00
Gardens in France by Steen	2.00
2 Practical Exemplan by Friba	1.00
Students edition of Georgian Period	1.50
Architecture by J. Buehlmann	.75
24 Miscellaneous books of architecture	6.00
2 Volumes Gardens of Italy by Phillips	5.00

in the Manuscript Division, Library of Congress

ARCH. DEPARTMENT: continued

11 Volumes Architectural record	$5.50 ✓
8 Volumes Brickbuilders	8.00 ✓
3 Volumes Edifices of Rome	1.50 ✓
3 American Country houses of today	3.00 ✓
13 Volumes Gardens old and new	9.75 ✓
3 Volumes building construction	.75 ✓
15 Miscellaneous books	3.75 ✓
Roll detail paper	.50 ✓
Quarter oak box	.50 ✓
	$67.50

BACK HALL:

Chest of drawers	$5.00 ✓
4 Books of Lithographs	12.00 ✓
Rug	.50 — NG
1 Extinguisher	8.00 ✓
1 Pyrene	3.00 ✓
3 Manville extinguishers	3.00—
2 Framed maps	3.00 ✓
	$34.50

LUNCH ROOM:

1 Small table	$4.00 ✓
1 Table	6.00 ✓
1 "	10.00 ✓
2 Benches	2.00 ✓
2 "	3.00 ✓
2 "	5.00 ✓
2 Stools	1.50 adj Change .75
1 Tracing machine	5.00 ✓
Men's dishes	10.00 ✓
Gas stove	2.00 ✓
1 Electric fan	8.00 ✓
	$56.50

BARN:

Paper press	$6.00 ✓	
Centrifuge	5.00	
Oven	.75	
Oven	3.00	
Maple writing table desk	4.00	
Cabinet of drawers	2.00	
2 Stools	2.00	
2 Model stands	6.00	
2 Barrels	2.00	
2 Fire extinguishers	16.00	only one Char 8.0
1 " "	1.00 ✓	
Table	2.00 ✓	
Easel	1.50 ✓	
Electric fan	3.00	no
Enlarging camera	35.00 ✓	
8 x 10 Camera	15.00 ✓	
5 x 7 "	5.00 ✓	
Scales	2.00 ✓	
1 (3¼ x 5⅛) Camera	25.00 ✓	
1 " " "	3.00	
Cooper Hewitt light	25.00 ✓	
	$164.25	

MAIN DRAFTING ROOM:

Lot miscellaneous books	$5.00 ✓
Lot of Geological sheets	20.00 ✓
16 City Atlases	48.00 ✓
Atlas of U. S.	3.00
	$76.00

PLANTING DESK ROOM:

5 Volumes German Gardens	2.50 ✓
30 Volumes garden magazines	4.50 ✓
55 Volumes magazines	16.50
14 Volumes Gardening	2.80
Indoor and out (lot)	1.50
20 Park & Cemetery	4.00
10 Garden & Forest	2.00
6 Forestry and Irrigation	1.20
14 House and Garden	3.50
6 der-Stadtebau	1.50
2 Volumes Twiggs gardens	4.00
7 House and Garden	3.50
9 American estates	2.25
14 Professor Sargent Silva	70.00
3 Volumes Flora & Silva	9.00

PLANTING DESK ROOM: contimued

2 Volumes trees and shrubs by Sargent	$8.00
California Silva by Jepson	4.00
Japan Flora by Sargent	3.00
Multigraph	35.00
Webster Dictionary	4.00
Plant atlas	3.00
200 Miscellaneous books (lot)	20.00
7 Garden Monographs	1.75
2 Volumes trees and shrubs by Bean	.50
3 Volumes Illustrated Flora	3.00
5 Volumes Dictionary of Gardening	1.00
6 Volumes Bailey Standard Encyclopedia	12.00
4 Volumes Cyclopedia of Am. Agr. by Bailey	12.00
4 " " " " "	10.00
2 Volumes Londons Encyclopedias	2.00
6 Londons	12.00
27 Miscellaneous books	5.40
	$265.40

FRONT OFFICE:

Wait Eng. and Arch. Law	$1.00
Mass. State Laws	5.00
17 Miscellaneous books	2.00
1917 Boston Directory	2.00
Year Book	1.50
Who's Who	3.00
Social Registers Wash.	.50
New York City	1.00
Locater	.75
Summer	.50
Dictionary French	2.00
Spanish	4.00
German	3.00
10 Odd volumes	2.50
Contents miscellaneous book case, reports	15.00
H. H. Richardson and his works	3.00
Ornimental Art by Wyatt	8.00
Withers Church Arch	5.00
Reptons Brightons	8.00
Kews Gardens	6.00
	$73.75

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SUPPLIES:

Carpenters supplies	$80.00 ✓
Drafting	800.00 ✓
Photo	40.00 — less
Model	40.00 ✓
Print	175.00 ✓
Stationery	600.00 ✓
Lunch	50.00 ✓
Janitor	7.00 ✓
Postage	40.00 ✓
Total	$1832.00

Grand total	$5941.90

(The total of second list should be $4023.90)

LEONARD & CO.
46-48 BROMFIELD STREET,
BOSTON, MASS.

Listed and appraised
by. Pierce S. Haley

The following adjustments have been made to the appraisal list attached to bring it up to the time of Mr. J. C. Olmsted's death, February 1920.

Deductions

page 2	$3.50
5	.75
7	2.00
	5.50
	.50
	2.00
8	3.00
9	.75
10	8.00
Total	26.00

The total value of the equipment appraised is $4,109.90. The appraisal value of the equipment on hand at the time of Mr. J. C. Olmsted's death was $4,109.90 minus $26.00 or $4,083.90

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G3. Patents for Printing Equipment

Patent No. 720,862 (February 17, 1903). . . page 265
Patent No. 765,406 (July 19, 1904). . . . . . page 269

1903

No. 720,962.

PATENTED FEB. 17, 1903.

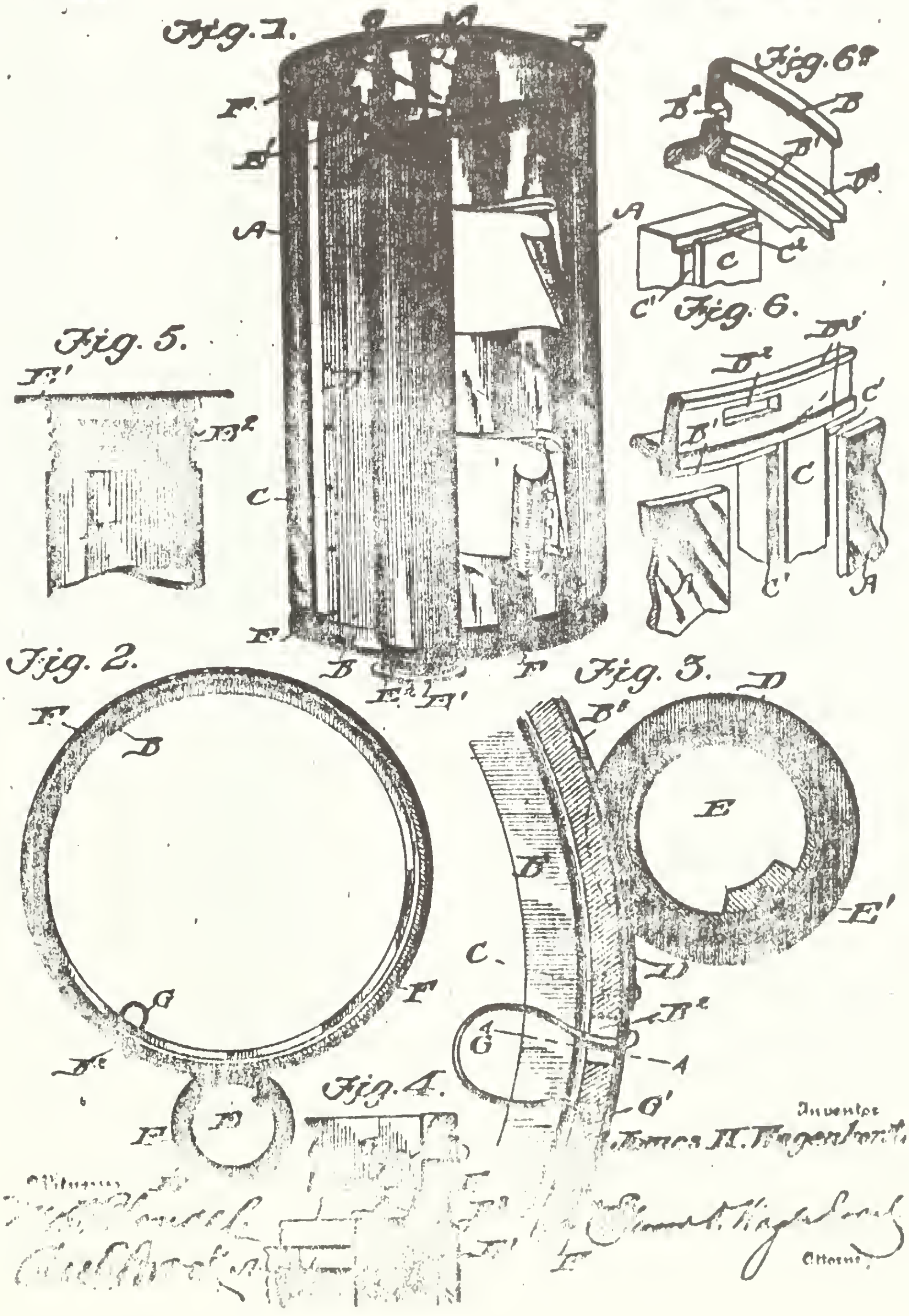
J. H. WAGENHORST.

BLUE PRINTING APPARATUS.

APPLICATION FILED NOV. 20 1902.

NO MODEL.

2 SHEETS—SHEET 1.



No. 720,962. PATENTED FEB. 17, 1903.

J. H. WAGENHORST.

BLUE PRINTING APPARATUS.

APPLICATION FILED NOV. 20 1902.

NO MODEL. 3 SHEETS—SHEET 2.

Fig. 7.

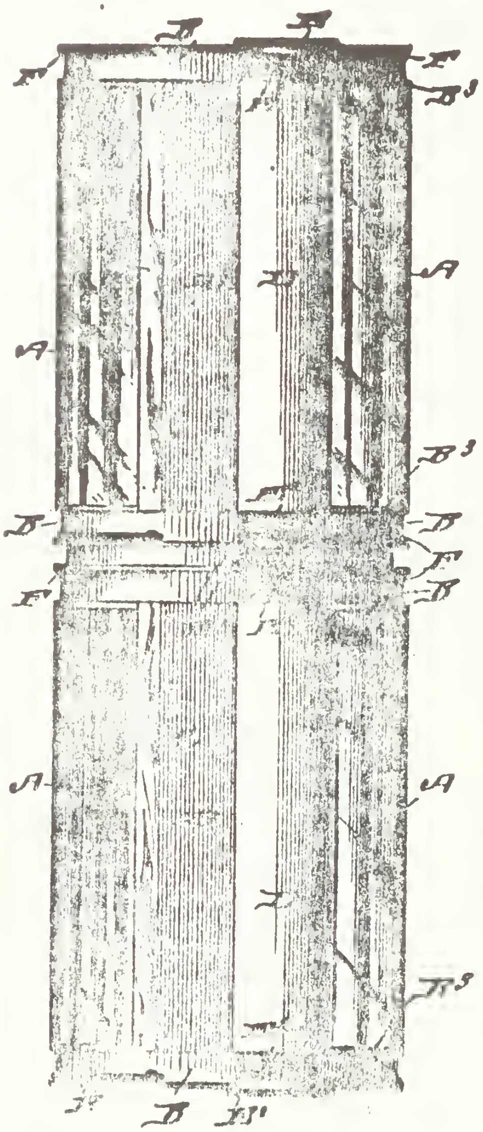
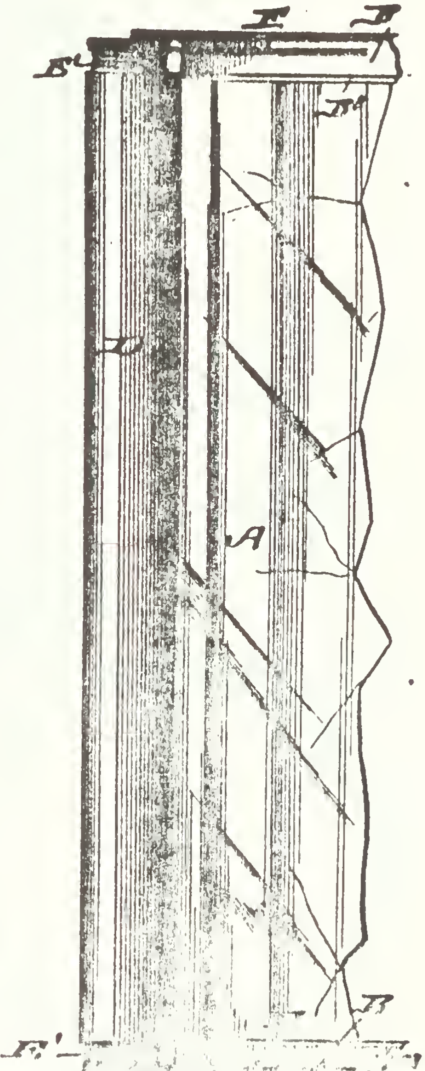


Fig. 8.



Witnesses

Wm. P. Blandell

Chas. O. Brock

Inventor

James H. Wagenhorst

By Edward Wagenhorst

Attorney

per and lower ends of the roller E are the cables F, each cable being wound several times around the end to which it is connected and in a direction opposite the direction in which the curtain is wound or rolled upon the roller. Each cable after being wound several times around the roller is passed completely around the cylinder and the end connected to one end of an essentially U-shaped spring G, the opposite end of said spring being seated in a recess G′, produced in each ring B, the free end of the spring working in a horizontal slot B^2, produced in the ring, so that the free end of the spring can have a limited movement, whereby the cable can be made to yield or can be taken up, as occasion requires. It will of course be understood that any form of yielding connection may be employed for connecting the ends of the cables to the top and bottom rings, so long as a yielding tension is maintained upon the cables.

In practice I prefer to construct the upper and lower ends of the rollers with flanges E′, which rest upon the upper and lower edges of the top and bottom rings, and, furthermore, I have found it desirable to provide the upper and lower portion of the roller with grooves E^2 for the purpose of guiding the cables during the winding operations, and in order to compensate for the increase thickness as the curtain is wound thereon I construct these grooved portions in tapering form, said grooved portions being widest at the upper and lower ends, respectively, of the upper and lower grooved portions. These details of construction while contributing to the ease of operation are not absolutely essential and may be varied or changed and, in fact, may be completely omitted without departing from the broad principle of my invention.

In order to guide the cables, the rings may be provided with outwardly-projecting flanges B^3 at their upper and lower edges, thereby preventing the cables slipping up or down during manipulation of the roller.

In Fig. 1 I have shown the manner of operating my invention and from which it will be seen that the tracings and the sensitized paper are placed next to the cylinder, and then the roller carrying the curtain is rolled around the cylinder by hand or otherwise to a point beyond the tracings and sensitized paper, and as the roller is revolved the curtain is unrolled, enveloping or covering the surface of the cylinder over which the roller has passed, and it is obvious that after one or more prints have been inserted and covered a second, third, or other number of series of prints may be subsequently inserted and covered without [illegible] or interfering with the [illegible] [illegible]

dium of the cables, which exert a constant tension upon the roller and curtain along the surface of the cylinder.

While I have shown and described my invention as applied to a cylinder, it is obvious that it may be applied to any other formholder transparent object, and, in fact, it can be applied to surface less than a complete figure, and this surface may be either curved, straight, or mixtilinear.

Thus it will be seen that I provide a simple and efficient device for holding the tracings or negatives and sensitized papers, which device thoroughly accomplishes all of the objects hereinbefore mentioned. It will also be understood that the curtain may be divided longitudinally or rather two sections of curtain may be employed—one for the upper half of cylinder and one for the lower half—and of course the roller will also be made in two independent sections, this idea being a mere duplication of the device shown in Fig. 1 as shown in Fig. 7. It is also obvious that a flange can be made upon each ring for the purpose of holding the roller in place, this construction obviating the necessity of flanges upon the ends of the roller and serving exactly the same purpose as shown in Fig. 8.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the kind described, a transparent surface, a curtain connected at one end to said surface, a roller to which the opposite end of the curtain is attached, and the cables connected to the roller, said cables holding the roller and curtain in contact with the transparent surfaces.

2. In a device of the kind described, a transparent surface, a curtain connected at one end to said surface, a roller to which the opposite end of the curtain is connected, and cables connecting the roller and surface, salu cables being wound around the roller at opposite ends.

3. In a device of the kind described, a transparent surface, a curtain, connected thereto, a roller upon which the curtain is attached, and cables connecting the surface and roller, said cables being wound around the ends of the roller in a direction opposite to that in which the curtain is rolled upon the roller.

4. In a device of the kind described, the combination with a transparent surface, of a curtain connected thereto, a roller to which the curtain is also attached, the cables connected to the roller at opposite ends, said cables being wound one or more times around the roller, and then yieldingly connected to the transparent surface.

[illegible] of the combination [illegible] of the [illegible] carried [illegible] to the [illegible] and also around the cylinder and tension device for connecting the cables to the cylinder as specified.

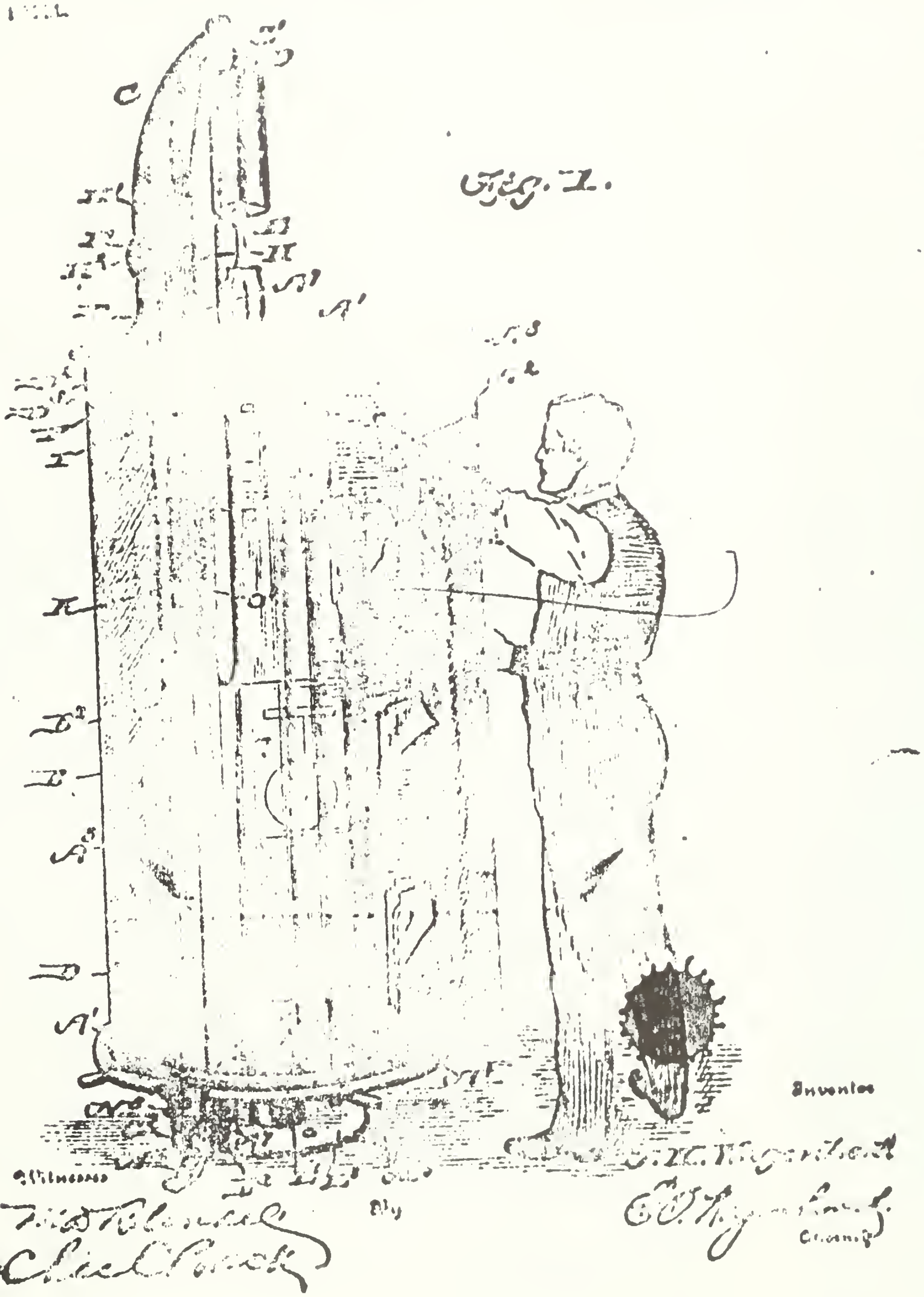
6. In a device of the kind described, the combination with the transparent cylinder, of the metal rings, the roller and curtain carried thereby, the cables, and the U-shaped springs for connecting the ends of the cables to the metal rings, the ends of the rollers being tapered and grooved and provided with flanges as specified.

JAMES H. WAGENHORST.

Witnesses:
John R. Walker,
N. O. Fleming.

Patent No.
765,466
July 19, 1904

Fig. 1.



Witnesses

Inventor

By

Attorney

No. [illegible] PATENTED JULY 18, 1899.

J. H. WAGENHORST.
FIRE EXTINGUISHING APPARATUS.
APPLICATION FILED AUG. 18, 1898.

NO MODEL. 6 SHEETS—SHEET 2.

Fig. 2.

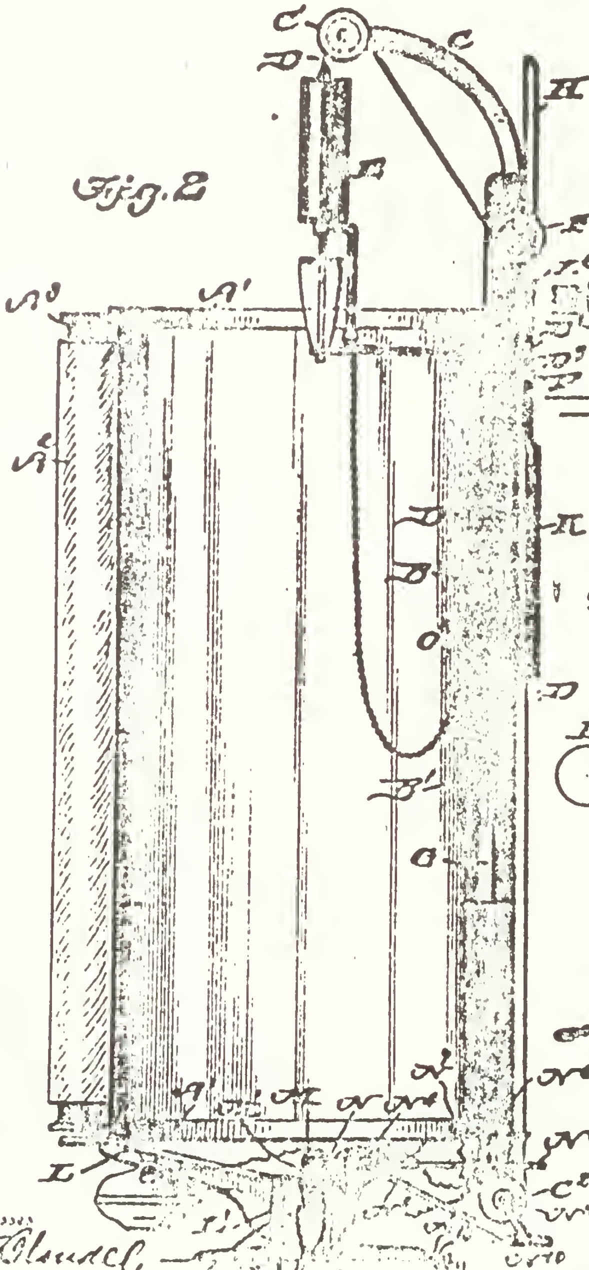


Fig. 29.

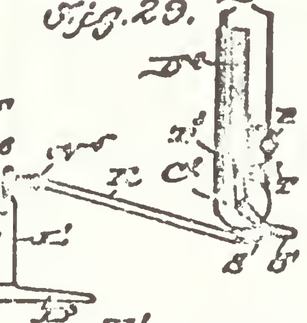


Fig. 30. Fig. 31.

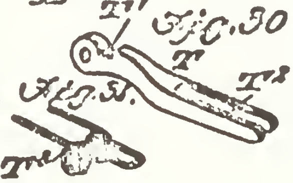


Fig. 6.

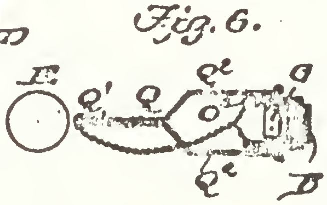
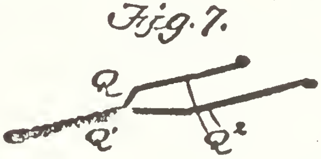


Fig. 7.



Witnesses
[illegible]
Theo. C. Brock

Inventor
J. H. Wagenhorst,
C. C. Wagenhorst
Attorney

No. 765,[illegible]. PATENTED JULY 19, 1904.

J. H. WAGENKONST.

BLUE PRINTING APPARATUS.

APPLICATION FILED AUG. [illegible], 1903.

NO MODEL. 6 SHEETS—SHEET 2.

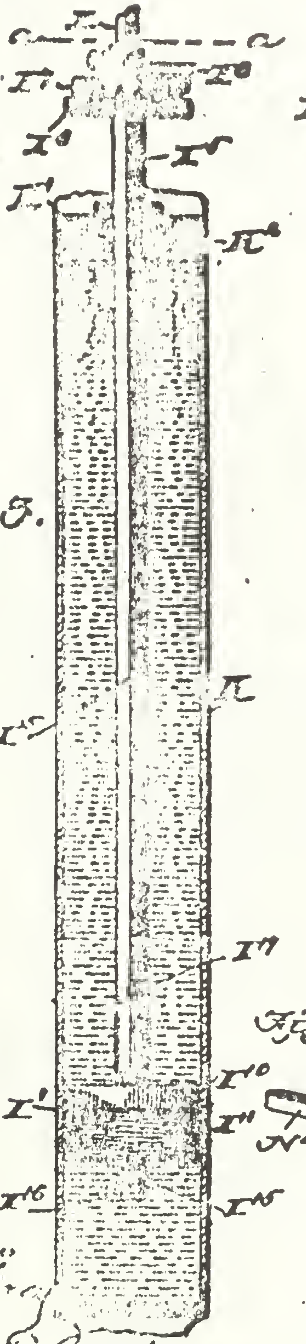


Fig. 3.

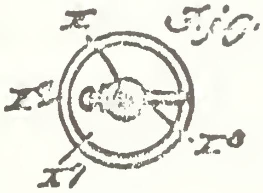


Fig. 3a

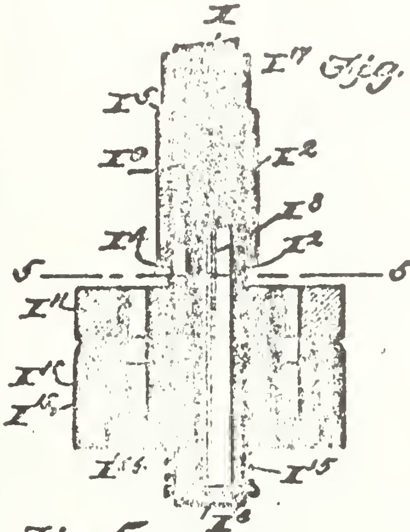


Fig. 4.

Fig. 5.

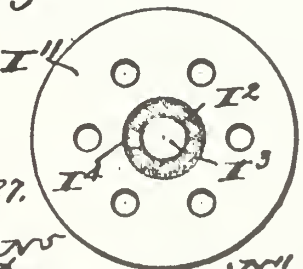


Fig. 27.

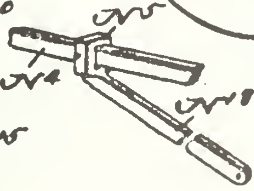
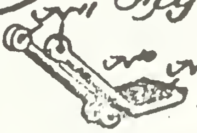


Fig. 28.



Witnesses

Chas. Brock

Inventor

J. H. Wagenkonst.

By

E. O. Wagenkonst

Attorney

No. [illegible] PATENTED JULY 19, 1904.

J. H. WAGENHORST.

BLUE PRINTING APPARATUS.

APPLICATION FILED APR. 10, 1903.

NO MODEL. 6 SHEETS—SHEET 6.

Fig. 8.

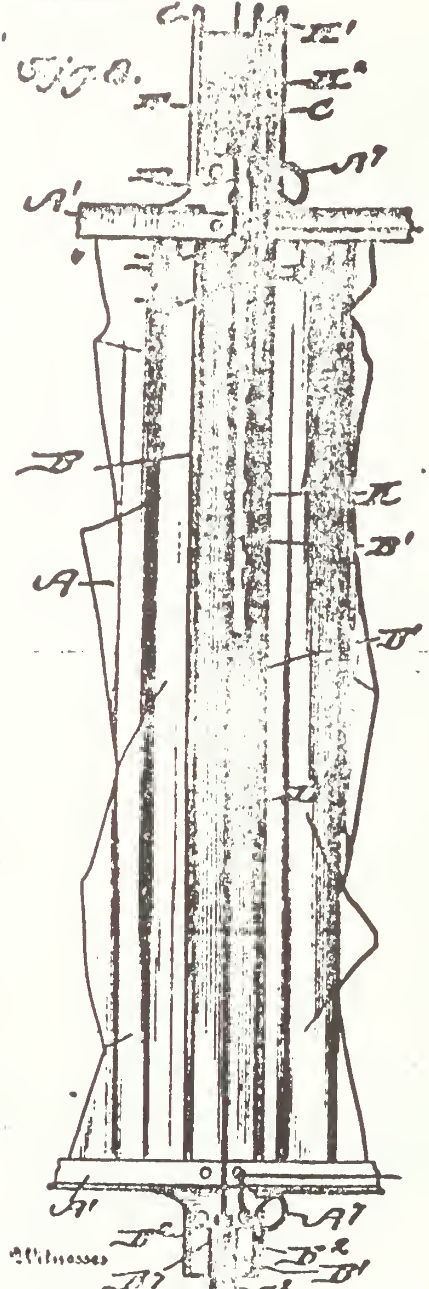


Fig. 9.

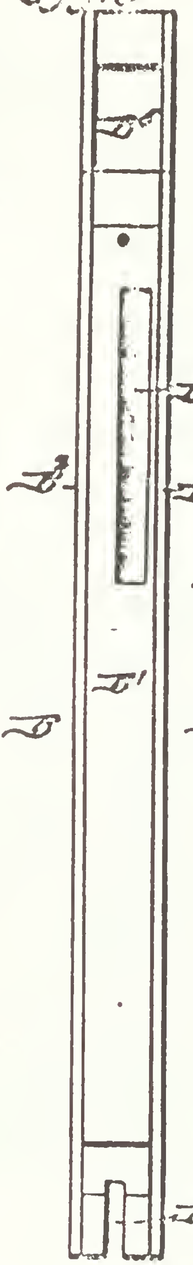


Fig. 10.

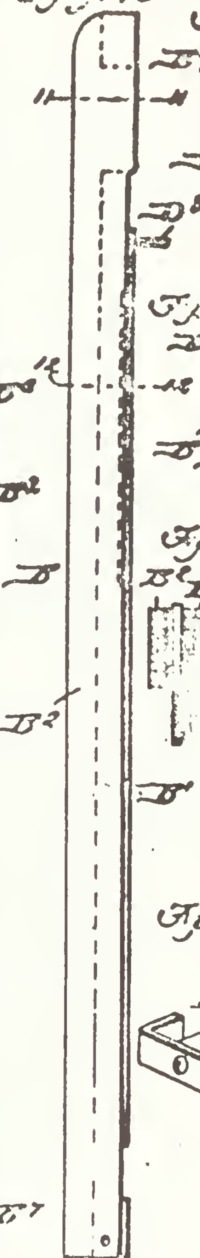


Fig. 11.

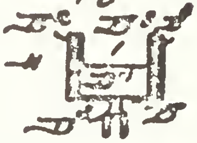


Fig. 12.

Fig. 13.

Fig. 14.

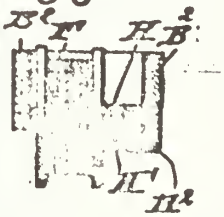
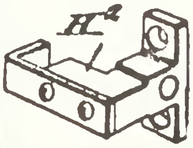


Fig. 15.



Witnesses

Chas. C. Brock

Inventor

J.H. Wagenhorst,

By

Attorney

No. 765,608. PATENTED JULY 19, 1904.

J. H. WAGENHORST.
BLUE PRINTING APPARATUS.
APPLICATION FILED AUG. 10, 1903.

NO MODEL. 6 SHEETS—SHEET 6.

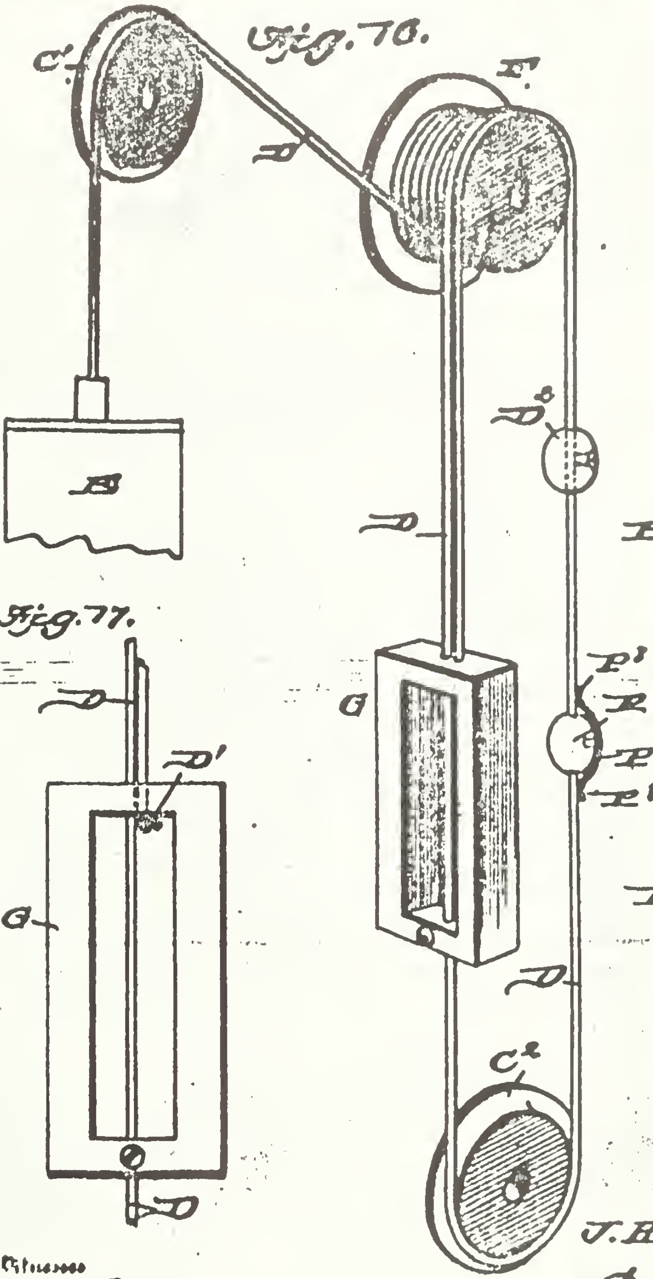


Fig. 76.

Fig. 77.

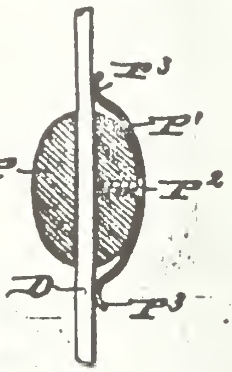


Fig. 78.

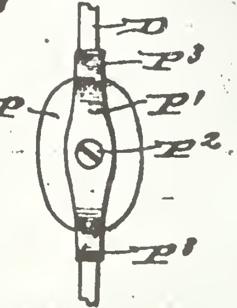


Fig. 79.

Witnesses
W. T. Blondell,
Chas. E. Birch

Inventor
J. H. Wagenhorst.

By

E. B. Wagenhorst.
Attorney

No. [illegible]. PATENTED JULY 10, 1906.

J. H. WAGENHORST.
BLUE PRINTING APPARATUS.
APPLICATION FILED AUG. 17, 1905.

NO MODEL. 6 SHEETS—SHEET 6.

Fig. 20.

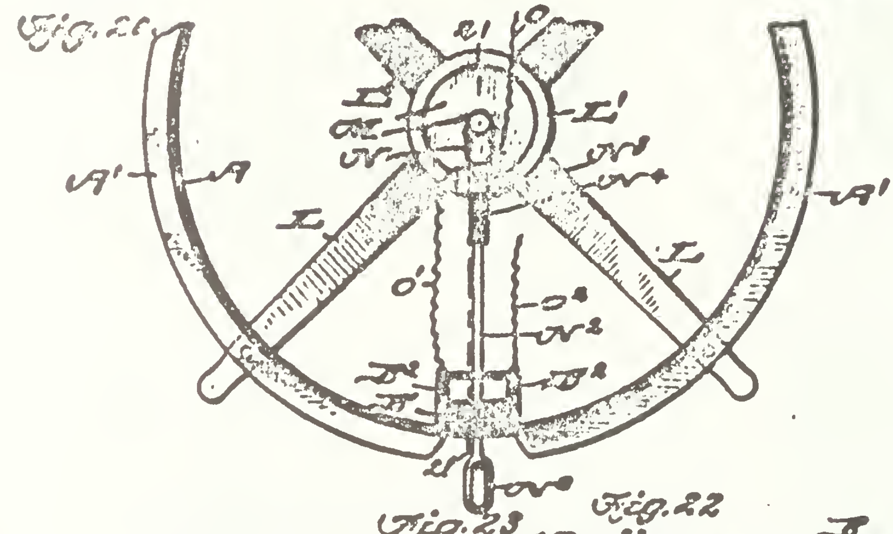


Fig. 23.

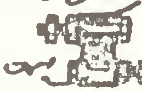


Fig. 22.

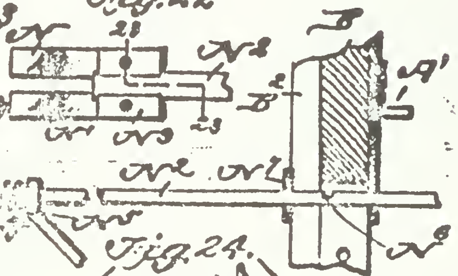


Fig. 21.

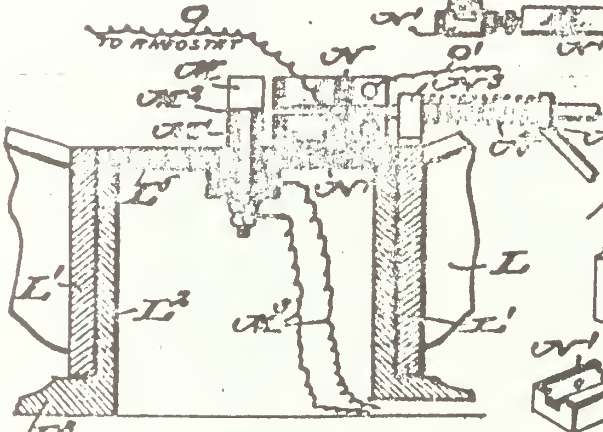


Fig. 24.

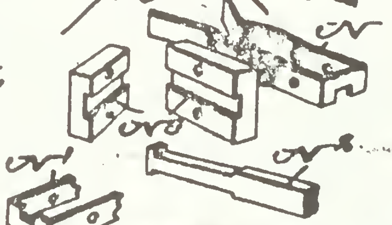


Fig. 25.

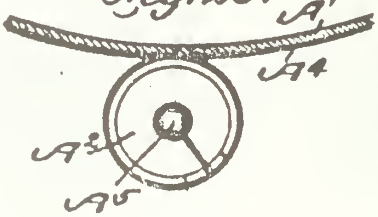
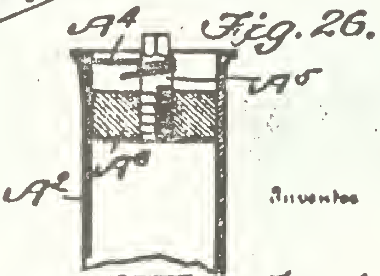


Fig. 26.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES H. WAGENHORST, OF MANSFIELD, OHIO.

BLUE-PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 765,406, dated July 19, 1904.

Application filed August 18, 1903. Serial No. 169,914. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WAGENHORST, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Blue-Printing Apparatus, of which the following is a specification.

This invention relates generally to blue-printing apparatuses in which an electric-arc light is used in connection with a glass cylinder, around which the drawings and sensitized paper are held by means of a spring-actuated curtain, such as are shown and described in the patent granted to me February 17, 1903, No. 720,862.

The object of the invention is to provide a novel means for lowering the electric light into the cylinder, said means being capable of regulation, so that the speed of descent may be regulated with accuracy, so as to expose the prints to the light the exact length of time required.

Another object of the invention is to provide for automatically cutting off the light the moment the light has traversed the entire height of the glass, thereby avoiding overexposure or burning of the print.

Another object of the invention is to provide for cutting off the light and stopping its descent at any predetermined time, thereby rendering the apparatus capable of use for making large or small prints, and a still further object is to provide for shutting off light at any desired time by either hand or foot power.

Another object of the invention is to provide a guiding-bracket in connection with the lamp for the purpose of preventing the shadows of the lamp-bracket and wire connections being thrown upon the prints.

With these various objects in view the invention consists in the employment of a glass cylinder arranged to rotate upon a base to which the line of wires are connected, said glass cylinder having an upright wooden strip arranged in connection therewith, said wooden strip having a lamp-bracket extending upwardly from its upper end, an electric lamp suspended from a cable passing over a pulley carried by the bracket, said wooden strip also carrying means by which the descent of the lamp into the cylinder is regulated, said means being adjustable, a switch adapted to be brought into contact with the connections upon the base, together with means for throwing the said switch out of engagement with the base connections when desired.

The invention consists also in the employment of a cylinder having a piston working therein, said piston being provided with a bypass for controlling the passage of liquid from one side of the piston to the other, the rod of the piston being operatively connected with the cable for raising and lowering the lamp, whereby the speed of descent of said lamp can be regulated.

The invention consists also in the peculiar construction of the strip arranged in connection with the cylinder and also in certain other details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of an apparatus constructed in accordance with my invention and showing the operation thereof. Fig. 2 is a vertical sectional view of the same, certain parts being shown in elevation. Fig. 3 is a detail sectional view of the cylinder, the piston and the piston-rod being shown in elevation. Fig. 3ᵃ is a detail sectional view on the line *a a* of Fig. 3. Fig. 4 is an enlarged sectional view of the lower end of the piston-rod and the piston arranged thereon. Fig. 5 is a sectional plan view taken on the line 5 5 of Fig. 4. Fig. 6 is a detail view partly in top plan and partly in section and illustrating the operation of the guide connected to the lamp. Fig. 7 is a detail perspective view of said guide. Fig. 8 is a side elevation showing a portion of the glass cylinder and metal rings connected thereto and also the wooden strip arranged in connection with the glass cylinder and carrying the means for controlling the descent of the lamp into the cylinder and also the means for operating the switch. Fig. 9 is a face view of the wooden strip disconnected from the cylinder. Fig. 10 is a side view of said strip. Fig. 11 is a sectional view on the line 11 11 of Fig. 10. Fig. 12 is a sectional view on the line 12 12 of Fig. 10.

Fig. 13 is a detail perspective view of the fork for holding the knob when it is desired to hold the lamp in its elevated position. Fig. 14 is a detail view illustrating the operation of the guide in connection with the rack-bar and pinion. Fig. 15 is a detail perspective view of the said guide. Fig. 16 is a view illustrating the cable for carrying the lamp, the pulleys and the drum around which the cable passes, the counterweight connected to the cable, and the permanent and adjustable buttons arranged upon the cable. Fig. 17 is a face view of the counterweight. Fig. 18 is a sectional view of the adjustable button. Fig. 19 is a face view of said button and the friction-spring carried thereby. Fig. 20 is a horizontal sectional view taken on the line 20 20 of Fig. 2 and showing the spring-actuated switch and the central post to which the line-wires are are connected. Fig. 21 is a vertical sectional view on the line 21 21 of Fig. 20, certain parts being shown in elevation. Fig. 22 is a detail view showing the arrangement of the contact-plates carried by the switch, and Fig. 23 is a detail sectional view on the line 23 23 of Fig. 22. Fig. 24 is a view showing the details of construction of the switch. Fig. 25 is a top plan view of the roller, showing the manner of connecting the wire thereto. Fig. 26 is a sectional view of the same. Figs. 27 and 28 are detail perspective views illustrating the foot-lever and pitman connected thereto for the purpose of operating the rod by foot-pressure. Figs. 29, 30, and 31 show details.

In carrying out my invention I employ a glass cylinder A, having top and bottom metal rings A', roller A^2, carrying the curtain A^3, all of said parts being substantially the same as those shown and described in my prior patent before referred to. In connection with the glass cylinder I employ a wooden strip B, against which the edges of the glass cylinder rest and to which metallic top and bottom rings are connected. Although I prefer to make the strip B of wood, it is obvious that other suitable material may be employed, if so desired, and in practice I prefer to build this strip with a face-piece B' and the side pieces B^2, thereby providing a vertical guideway B^3 upon the interior, and at the same time I provide shoulders B^4 upon the exterior for the edges of the glass cylinder to rest against. The strip has an opening B^5 near the top, a recess B^6 adjacent the opening, and the bifurcation B^7 at the lower end, the function of which will appear hereinafter. A curved bifurcated bracket C is connected to the upper end of the strip B, the upper end of said bracket extending directly over the center of the cylinder and carrying a pulley C', over which travels the cable D, carrying the electric-arc light E. It will thus be understood that in making the blue-prints the tracings or drawings and the sensitized papers are arranged upon the exterior of the gla cylinder and held in place by means of th curtain and spring-actuated roller carrying said curtain and that in order to make the prints the electric-arc light is lowered into the glass cylinder, and it is necessary that th electric light should descend gradually, and, furthermore, it is often desirable to regulate the speed of descent, as some prints may require more or less light-exposure than others. It is also desirable to cut off the light as soon as it accomplishes its purpose, thereby economizing in the use of the current, and it is with the idea of accomplishing these objects that I have devised the present means for controlling and regulating the descent of the lamp and the cutting off of the light. The cable D after passing around the pulley C' passes one or more times around a grooved drum F, said drum being journaled in boxes arranged upon opposite sides of the cut-out portion B^5 of the strip. The cable then passes downwardly in the vertical guideway B^3 and through the counterbalance-weight G, which slides vertically in the guideway B^3, and the cable after passing through the counterbalance-weight G passes around a pulley C^2, journaled in the bifurcated end B^7 of the strip B, along the outer face of the strip through the opening B^5, and over the grooved drum F again, and down to the counterweight, the end of the cable being connected to said weight, as shown at D'. The lamp E is slightly heavier than the counterbalance-weight G and will descend as soon as the cable is released; but the weight will make the descent gradually and at the same time keep the cable tight upon the pulleys and drum. For the purpose of securing the cable and holding the lamp in its elevated position I attach a button D^2 permanently to the outer flight of the cable, which button is adapted to engage the fork D^3, fastened to the strip B adjacent its upper end, and so long as the button rests upon the fork the lamp will be held in its elevated position; but as soon as the button is disengaged from the fork the descent of the lamp will begin.

Mounted upon the shaft of the drum F is a pinion H, which meshes with a rack-bar H', said rack-bar being held in engagement with the pinion by means of a guide H^2, connected to an arm carried by one of the journal-boxes of the drum-shaft. The lower end of the rack-bar H' is connected to a piston-rod I, carrying a piston I', which works in a cylinder K, located in the recessed portion B^6 of the strip B. This cylinder K has a detachable cap K', through which the piston works, said cap having an opening K^2 to prevent the formation of a vacuum. The lower end of the piston-rod is threaded, as shown at I^2, and in the extreme end of the piston-rod is produced a longitudinal passage I^3, having an opening I^4, arranged at a point above the pi ing I', so that as the piston is forced downwardly, the liquid can pass through the passage to the upper side of the piston, this passage constituting the by-pass within the piston-rod, and for the purpose of regulating the size of the discharge-opening so that the rate of descent of the piston can be regulated I employ a tube I^6, which surrounds the piston-rod for the greater portion of its length, said tube extending through the cap K' of the cylinder, and is provided with a milled wheel I^8 at its upper end, said milled wheel carrying a circular boss I^7, which is graduated and provided with suitable indicating-numbers, and a pointer I^9 is rigidly attached to the piston-rod, said pointer serving to indicate upon the graduated boss the size of the opening exposed and from which the rate of descent can be judged. The lower end of the tube I^6 is threaded, as shown at I', and by turning the milled wheel I^8 this tube is caused to move up or down upon the piston-rod, thereby enlarging or decreasing the size of the opening I', through which the oil passes from the under side of the piston to the upper side. It will thus be seen that I arrange a by-pass for the liquid within the piston-rod and arrange the controlling means upon the rod, thereby avoiding the necessity of supplemental by-passes and valves, which are liable to leak or get out of order.

Any suitable liquid may be placed in the cylinder; but in practice I prefer to use oil, as I find it particularly adapted for my purpose.

The piston-cup I^{10}, held upon the end of the piston-rod between the metal disks I^{11} and I^{12}, arranged above and below the said cup, said disks being threaded upon the piston-rod and provided with registering perforations I^{13}, the cup also having perforations which register with the said perforations I^{13}, so that when the piston is moved upwardly the liquid above the piston will pass therethrough. The passage of the liquid through these perforations is prevented during the downward movement of the piston by means of a check-valve I^{14}, mounted upon the smooth reduced end of the piston-rod and normally held against the disk I^{12} by means of a spring I^{15}. A pin I^{16}, passed through the lower end of the piston-rod, holds this spring in place. This spring, together with the pressure of the liquid, keeps the valve firmly seated during the downward movement of the piston; but the valve is unseated during the upward movement of the piston, said unseating being accomplished by the pressure of the liquid above the piston, aided by the partial vacuum created below the piston, it being understood that the piston is only moved upwardly when the lamp is carried back to its initial or starting position.

It will thus be seen that I not only provide for a gradual descent of the lamp, but also provide for regulating such descent, so that prints can be exposed to the action of the light for a long or short period of time, as circumstances may require.

The glass cylinder is supported upon spider-arms L, which radiate from a tubular bearing L', which rotates freely upon a tubular upright journal L^2, having a flat base L^3, which rests upon the floor. A circular plate L^4, of non-conducting material, rests upon the top of the tubular journal L^2, and fixed in said plate is an upright post M, surrounded by a tube M', said post and tube being insulated from each other by means of an insulating-sleeve M^2. Line-wires M^3 pass upwardly through the floor through the tubular journal and are connected to the lower ends of the post M and tube M'. The post and tube are circular and are of the same diameter, so that the U-shaped spring contact-plates N and N' of the switch can contact therewith and can revolve or turn freely thereon whenever it becomes necessary to turn or rotate the glass cylinder. The contact-plate N engages the post M, while contact-plate N' engages the tube M', said contact-plates being carried upon the inner end of a rod N^2, which works through a guide N^3 and has a coil-spring N^4 arranged thereon, an adjusting-collar N^5 being arranged upon the rod and secured by a pin or set-screw for the purpose of applying the proper tension to the spring N^4. A notch N^6 is produced in the top of the bar adjacent its outer end for the purpose of engaging a plate N^7, carried by the strip B adjacent its lower end, the outer end of the rod working through the bifurcated portion and terminating in a loop or handle N^8, through which the cable D passes after passing around the pulley C^3. The U-shaped contact-plates N and N' are secured to blocks of insulating material N^9, fastened upon the end of the rod N^2. The spring N^4 normally holds the contact-plates out of engagement with the conductor-posts; but by pushing the rod inwardly these plates come in contact with the conductor-post and tube and close the circuit, and when the rod is so pushed in the notch N^6 engages the plate N^7 and holds the switch closed. For the purpose of operating the rod by foot-pressure I employ an angled lever N^{10}, pivoted at N^{11} upon the shaft carrying the roller C^3 and provided with an outwardly-extending foot-piece N^{12}, a pitman-rod N^{13} being pivotally connected to the angle of the lever N^{10}, the inner end of said pitman being rigidly connected to the collar N^5, so that by pressing downwardly upon the foot-piece the pitman pushes the rod inwardly and upwardly, so as to bring the notch N^6 into engagement with the plate N^7. The contact-plates are each provided with binding-screws from which lead conductor-wires O and O', the conductor-wire O leading to a rheostat suspended from one of the spider-arms, while the conductor-wire O' leads to the lamp, and the wire O^2, leading from the thereto), lead also to the lamp, said wires being carried up the strip B on the inner side to a point C', and from there they lead to the lamp, the conductor-wires being slack to permit the lamp to move freely up and down. When the switch is thrown out of engagement with the conductor-post, the current is broken and the lamp of course extinguished, and the opening of the switch can be accomplished by pressing downwardly upon the outer end of the rod, either by hand or foot; but in order to provide for automatically shutting off the lamp when it has traversed the entire cylinder or for the purpose of shutting off the lamp at any predetermined time I employ an adjustable button P upon the cable D, which button can be arranged at any desired point so that it will contact with the slotted or handle end of the rod N^2, it being understood that as the lamp descends the cable moves, carrying with it the adjustable button P, and only a slight pressure is needed upon the outer end of the rod to throw the notch N^6 out of engagement with the plate N^7, and the spring N^4 will immediately open the switch, shutting off light. The button P is held in position upon the cable by means of the friction-spring P', secured to the button by means of a screw P^2, the ends of the plate being curved outwardly, as shown at P^3, and adapted to bear against the cable. By means of this adjustable button I am enabled to automatically shut off the light at any time during the descent of the lamp.

In order to prevent shadows of the lamp-bracket and conductor-wires being thrown upon the print, I employ a lamp-guide Q, attached to the lamp and which comprises the shank portion Q', leg portions Q^2, and which straddle the strip B, and thereby cause the lamp to descend in a straight line, and the only shadows cast will be thrown upon said strip B and will not be thrown upon the prints. By reference to Fig. 6 it will be noted that the lamp-guide works upon the strip B upon the exterior, while the counterbalance-weight is guided upon the interior of said strip.

In Figs. 25 and 26 I have shown the manner of connecting the wires A^4 to the rollers A^3, said wires being connected to screw-plugs A^5, fastened in blocks A^6, carried at the ends of the rollers. The opposite ends of these wires A^4 are connected to U-shaped springs A^7, said springs being fastened to the upper and lower rings A', as most clearly shown in Figs. 1 and 8. In this manner the proper tension can always be had upon the roller and curtain attached thereto.

In operation the lamp is raised to its highest position and held there by the button D' engaging the fork D^2. The switch at this time is of course open, and the operator can then place the drawings and the sensitized papers upon the exterior of the cylinder and cover them by means of the curtain, and the cylinder can be rotated, if desired, during each operation, thereby rendering the arrangement of the drawings and sensitized paper upon the cylinder much easier. After the drawings, &c., have been arranged, the button D' is disengaged from the fork D^2, the by-pass of the piston-rod regulated according to the rate of descent desired, and the adjustable button P adjusted to the proper position. The rod N^2 is then pushed inwardly, closing the switch and lighting the lamp. The lamp will descend gradually at the predetermined rate of speed, and owing to the lamp-guide and the arrangement of the wires no shadow will be cast upon the prints, but will be cast only upon the wooden strip B. As the lamp descends the counterbalance-weight ascends, the drum F is rotated, operating the pinion, which in turn operates the rack-bar and forces the piston downwardly, and this piston in turn forces the liquid from the lower end of the cylinder through the by-pass of the piston-rod. During the printing operation the cylinder can be rotated for the purpose of inspecting the prints from the opposite side of the cylinder, and such rotation of the cylinder will not affect the switch nor the clamp nor any of the parts attached thereto. The moment, however, the adjustable button contacts with the rod it disengages said rod, and the spring carried thereby causes the switch to be opened and the light to be shut off.

It will be noted that the apparatus is not connected to the wall or ceiling and has no connection whatever with any portion of the room except the floor, and inasmuch as the line-wires pass upwardly through the floor and the journal upon which the cylinder rotates it is obvious that there are no parts to become entangled, and the operator can pass freely around the apparatus, or he can remain in one place and turn the apparatus so as to bring any part thereof close to him. Thus it will be noted that I have provided a simple and efficient construction of blue-print apparatus capable of accomplishing all of the objects hereinbefore mentioned.

Instead of the spring-actuated rod N^2 and pitmen N^{12} employed for opening and closing the switch and illustrated in Figs. 2, 20, 21, and 27 and 28 I may employ the modified construction, the details of which are clearly shown in Figs. 29, 30, and 31, and by referring to the said figures it will be noted that I employ a rod R, which carries the spring contact-plates N at its inner end and is surrounded by the spring N^4 and carries the collar N^5 the same as the rod N^2. This rod, however, is bent downwardly and is pivotally connected to the lower end of an elbow-lever S, having a foot-piece S', said lever being mounted upon the shaft of the roller C^3 and is bifurcated at its upper end, and pivoted in said bifurcation is a latch T, having a notch T', which is adapted to engage the lower cyl-

[illegible] carrier, and this catch is also bifurcated at its other end, as shown at T, and through which the cable D passes. A spring T' normally holds the catch in engagement with the cylinder-ring and holds the contact-plates in contact with the posts. When, however, the adjustable stop P contacts with the bifurcated end of the catch, the said catch is thrown down, disengaging the notch T from the cylinder-ring, and the spring N' will then act to disengage the contact-plates and open the switch. To reset the parts, it is only necessary to press down upon the foot-piece S', as the latch T will be brought into engagement with the ring simultaneously with the closing of the switch. It will also be noted that I produce a small opening P'' in the tube P' adjacent the lower end for the purpose of permitting the escape of any oil which may pass upwardly between the piston-rod and tube.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An apparatus of the kind described comprising a glass cylinder provided with means for holding printing material thereto, a bracket carried by the cylinder and from which depends a cable carrying a lamp together with means carried by the cylinder for regulating the rate of descent of the lamp, together with means carried by the cylinder for automatically opening and closing the circuit for the lamp.

2. An apparatus of the kind described, comprising a base, a glass cylinder rotatably arranged upon said base, and provided with means for holding the printing materials upon the exterior thereof, an electric lamp adapted to move vertically within the cylinder, a cable from which the lamp is suspended, means carried by the cylinder for winding and unwinding said cable, and means also carried by the cylinder for regulating the rate of speed of the cable-winding mechanism.

3. An apparatus of the kind described comprising a transparent cylinder provided with an enveloping curtain, an electric lamp adapted to be lowered into the cylinder, means carried by the cylinder for controlling the descent of the lamp, the electric conductors leading to the lamp, and a switch carried by the cylinder together with means for opening and closing the same, substantially as set forth.

4. The combination with a cylinder of transparent material of an electric lamp adapted to be lowered into the cylinder a cable carried by the cylinder and from which the lamp is suspended, a cylinder adapted to contain a liquid, arranged upon the exterior of the glass cylinder and provided with a by-pass piston working in the liquid-cylinder and means for operatively connecting the piston with the cable whereby the rate of speed of descent is regulated.

5. The combination with a transparent cylinder and electric lamp adapted to be lowered into said glass cylinder, a cable for carrying the lamp, the drum and pulleys around which the cable passes, the conductors rigidly connected to the cable, a cylinder arranged upon the exterior of the glass cylinder and adapted to contain a liquid, said cylinder having a piston-rod provided with a by-pass, a valved piston working in the cylinder together with means for operatively connecting the piston-rod with the drum around which the cable passes.

6. The combination with the glass cylinder having a wooden strip, of a cylinder connected to the exterior of the wooden strip and having a piston-rod provided with a by-pass provided with a regulating-tube, the valved piston working in the cylinder, the piston-rod having a rack-bar connected thereto, a pinion with which the rack-bar meshes, a grooved drum mounted upon the shaft and carried by the strip, a lamp-guide carrying a pulley, a pulley carried at the bottom of the strip, a cable passing around the pulleys and drum and connected to a lamp at one end, and a counterbalanced weight at the opposite end.

7. The combination with a glass cylinder having a vertical strip extending into the same, of an electric lamp adapted to descend into the glass cylinder and a lamp-guide comprising a shank connected to the lamp, and the leg portions adapted to straddle the vertical strip and guide the lamp as set forth.

8. The combination with a glass cylinder and the bearing upon which it turns, of the journal upon which the bearing fits, the conductor-posts carried by said journal, a switch carried by the rotating cylinder together with means for moving it into and out of engagement with the conductor-posts, an electric lamp carried by the rotating cylinder and the conductor-wires leading from the switch to the lamp, as set forth.

9. The combination with the journal supporting the conductors to which the line-wires are connected, the glass cylinder provided with a bearing turning upon said journal, the electric lamp adapted to be lowered into the cylinder, a cable for suspending said lamp, together with means for controlling the movement of said cable, the contact-plates adapted to engage the conductors supported by the journal the rod for carrying said plates the conductor-wires leading from the plates to the lamp, a spring for normally holding the plates out of engagement with the conductors, means for locking plates in engagement with the conductors together with means carried by the cable for unlocking the plates, substantially as set forth.

10. The combination with a rotatable glass cylinder, having a strip at one side thereof, said strip having a guideway upon the inner side, cut away adjacent its upper ends, and bifurcated at its lower end, of the journal upon

which the cylinder projects, a bracket connected to the upper end of the strip and carrying a pulley, a grooved drum journaled in the opening of the strip, a pulley journaled in the bifurcated end of the strip, an electric lamp adapted to be lowered into the cylinder, a cable for suspending said lamp, said cable passing around the pulleys and drum, as described, a counterweight sliding in the guideway of the strip and to which the cable is connected, a cylinder arranged upon the exterior of the strip, a piston-rod having a controlled by-pass, a valved piston working in the cylinder, a rack-bar connected to the piston-rod, a pinion mounted upon the drum-shaft and with which the rack-bar meshes, the [illegible] arranged upon the outer flight of the [illegible] the conductor-tube and tube arranged [illegible] scribed, the spring-actuated rod having a [illegible] at its outer end, and a notch adjacent its head, a plate adapted to engage said notch, the contact-plates carried upon the lower ends of the spring-actuated rod, the conductor-wires connected to the contact-plates and leading to the lamp, substantially as described.

J. H. WAGENHORST.

Witnesses:
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N. O. FLEMING.

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I 29.88
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